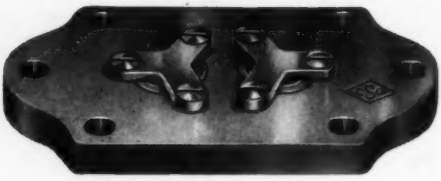
Refrigeration
Service Engineer
APRIL
1948
Vol. 16 No. 4

Chicago Valve Plates



THE HEART OF YOUR COMPRESSOR

SOLD THROUGH LEADING
REFRIGERATION WHOLESALERS

PERFECT BALANCE

Chicago Seals
MODERN DESIGN

FOR TROUBLE-FREE PERFORMANCE USE CHICAGO VALVE PLATES

The only Valve Plate with the replaceable valve seats.

Available for
340 MODELS

CHICAGO SEAL CO. 20 N. WACKER DR., CHICAGO 6, ILL.

THE REFRIGERATION SERVICE ENGINEER, Nickerson & Collins Co., Publishers, 433-435 N. Waller Ave., Chicago 44, Ill. Published monthly, Vol. 16, No. 4, April, 1948. Entered as second-class matter March 4, 1938, Chicago, Ill., under the Act of March 3, 1879. Additional entry at Beloit, Wisc. April 15, 1948. Copyright 1948. Subscription in the U. S. $3.00 per year; other countries $4.00.

The Ansul Research Staff
REPORTS ON . . . . .

WAX IN OIL-REFRIGERANT MIXTURES

WAX CAUSES FROZEN VALVES *too!*

These photographs show the results of practical machine tests in which 10% oil was circulated with the refrigerant. Valve temperature was approximately −25 degrees Fahrenheit. Every effort was made to exclude moisture. Within a few hours wax separated throughout the body of the expansion valve and the forepart of the expansion coil adhering firmly to the metal.

* Ansul jobbers are ready and equipped to render an intelligent, co-operative service to refrigeration engineers and maintenance men on problems which arise from time-to-time in the operation of refrigerating systems.

FOR EXAMPLE:

Samples of ice machine oils submitted by users of Ansul Refrigerants to Ansul Jobbers, are tested by Ansul laboratories without charge by the Ansul Standard Wax-Oil Separation Method. This approved method, developed and standardized especially for use in connection with oils used in refrigerating systems, provides an accurate determination of the amount of wax which separates from an oil at low temperatures.

A wax deposit, about 1/8 inch thick, formed on the plate carrying the ball-valve enclosure and almost completely clogged the outlet of the expansion valve.

Wax deposited on the ball-valve closure plate

REMEDIES

To eliminate wax trouble in expansion valves and coils:

*

1. Use an oil which separates little or no wax from its mixture with the refrigerant at the operating temperature of the valve.

2. Install an oil trap to cut down the amount of oil (and consequent wax) circulating with the refrigerant.

Wax deposited in outlet of expansion valve

SEND FOR THIS BULLETIN

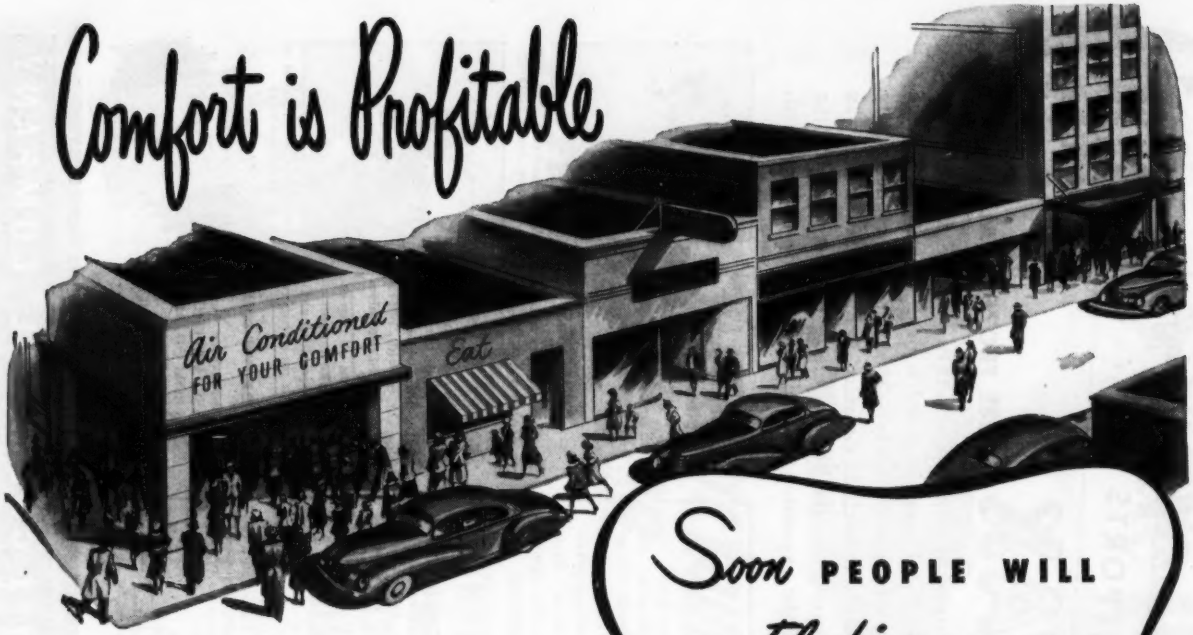
An informative reprint, "THE SEPARATION OF WAX FROM OIL-REFRIGERANT MIXTURES," will be sent on request. No obligation. Just address . . .

*REG. U.S. PAT. OFF.

ANSUL REFRIGERANTS ARE AVAILABLE AT LEADING WHOLESALERS EVERYWHERE

ANSUL CHEMICAL COMPANY
REFRIGERATION DIVISION, MARINETTE, WISCONSIN
DISTRIBUTORS FOR KINETIC S, FREON 11, FREON 12, FREON 21, FREON 22 AND FREON 113

Comfort is Profitable



Soon PEOPLE WILL BE *Flocking* TO THE AIR-CONDITIONED PLACES

Desire for comfort has been one of the great driving forces of civilization. As soon as man assures himself enough to eat, he sets about improving his comfort. He is willing to spend plenty of money to do it. That desire for comfort can make profit for you and for the users of air conditioning.

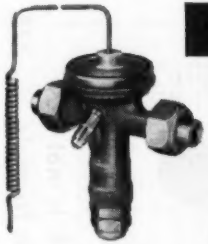
Soon people will be flocking to air conditioned stores, movies,

Soon people will be flocking to air conditioned stores, movies, taverns, etc. Those who can afford it will be thinking about air conditioning for homes and offices.

Start now to sell air conditioning, and remember "Detroit" Thermostatic Expansion Valves provide the most satisfactory, trouble-free refrigerant control.

Available in the desired capacities, they have the dependability and durability to give long service without attention.

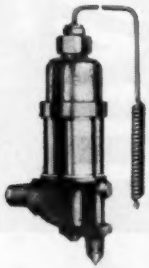
"Detroit" Thermostatic Expansion Valves are gas-charged—which gives them close regulation—guards against motor overload. Often, gas charging makes possible use of a smaller motor, since it does not have to work against excessive pressure during the pulldown period. Gas-charged valves balance the system more quickly when starting up, insuring fast, positive action.



"DETROIT" No. 899

Thermostatic Expansion Valve

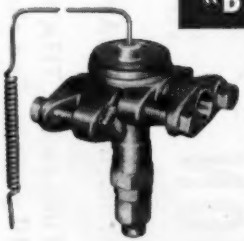
An air conditioning or commercial valve of intermediate capacity. Incorporates the features of single diaphragm construction and gas charging. Forged union connections are compact and make removal easy. Capacity 1.5 to 6 tons Freon-12.



"DETROIT" No. 673

Thermostatic Expansion Valve

For many years, the standard of the air conditioning and refrigeration industry. Reliability proved by long service. Orifice sizes ¼" to ⅞" with capacities up to 3½ tons Freon-12 and 6 tons Methyl.



"DETROIT" No. 787

Thermostatic Expansion Valve

Representative of the "Detroit" large capacity line. No. 786 is rated 3 to 6 tons . . . No. 787—6 to 11 tons . . . No. 788—12 to 20 tons Freon-12. These valves have external equalizer connection and can be furnished with No. 790 distributor with 2 to 18 outlets for multiple distribution.

2989

DETROIT LUBRICATOR COMPANY

"DETROIT"

General Offices: 5900 TRUMBULL AVENUE, DETROIT 8, MICHIGAN

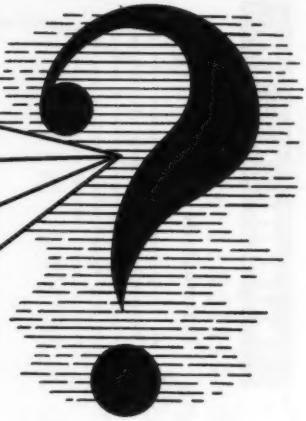
Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

Canadian Representatives — RAILWAY AND ENGINEERING SPECIALTIES LIMITED MONTREAL TORONTO WINNIPEG

"Detroit" Heating and Refrigeration Controls • Engine Safety Controls • Float Valves and Oil Burner Accessories • "Detroit" Expansion Valves and Refrigeration Accessories • Stationary and Locomotive Lubricators

The Answer to an

IMPORTANT QUESTION



QUESTION: What about THAWZONE? Is it good?

ANSWER: Time-tested THAWZONE is not new . . . 10 years and no change in formula . . . 275 wholesalers (not counting their branches) . . . many service engineers, ice cream companies, manufacturers . . . dehydration, acid neutralization, prevention or reduction of oil decomposition, corrosion and copper-plating . . . for the old or new refrigeration system . . . sales soaring!

Your nearest wholesaler can supply you

HIGHSIDE CHEMICALS COMPANY
195 VERONA AVENUE, NEWARK 4, N. J.

TRADEMARK REGISTERED U. S. PATENT OFFICE

THAWZONE
PATENTED
The PIONEER FLUID DEHYDRANT

. . . You'll welcome this

NEW DFN "*PENCIL*" STRAINER

High Capacity Strainer

AT VERY LOW COST!

NOW you can protect *ALL* your Expansion Valves, Solenoid Valves, Two-temperature Valves, Float Valves, Pressure Regulator Valves, Capillary Tubes and other liquid controls.

Part No. 5625
ACTUAL SIZE

3

SQUARE INCHES FREE SCREEN AREA

Screen of 100 mesh Monel Metal resistance welded

One piece ¼" O.D. copper shell. Connections for ¼" O.D. tubing.

- Safely installed on the line with brazing alloy or soft solder.
- Saves space; eliminates mounting straps; streamlines your installation.
- Provides efficient depth screening — free flow — no pressure drop.

SEE IT AT YOUR WHOLESALER—OR WRITE.

McINTIRE CONNECTOR CO.

255 Jefferson St. Newark 5, N. J.

To Help You Sell More

Curtis AIR CONDITIONERS Are Advertised in the "SATURDAY EVENING POST" "TIME"

AND OTHER LEADING MAGAZINES

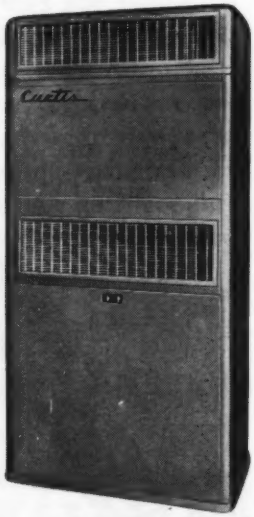
Starting April 24, Curtis Air Conditioners will be featured in full pages in color in the Saturday Evening Post and Time presenting the advantages of Curtis "Comfort Zone" Air Conditioning to more than 5,500,000 readers.

Here's your opportunity to reap the benefit of the great selling and merchandising power of these outstanding publications—reaching your major markets.

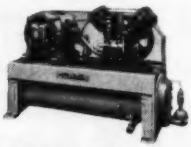
Sound design and engineering have proven Curtis units to be ideal for stores, offices, taverns, drug stores, apparel shops, beauty parlors, restaurants and many others.

It will pay you to get set to sell this vast and rapidly growing market *now*.

Write to Curtis for full information on how *you* can tie in with Curtis' new national advertising plans and assure more air conditioning sales and profits for 1948.



Curtis Air Conditioning Units 3, 5, 7½, 10 and 15 Tons



Curtis Condensing Units for Commercial Refrigeration—¼ to 30 H.P. air and water cooled.

Curtis REFRIGERATING MACHINE DIVISION

of Curtis Manufacturing Co.

1952 Kienlen Ave. St. Louis 20, Mo.

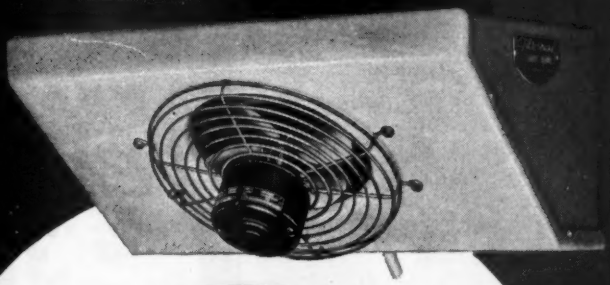
94 Years of Precision Manufacturing

AB-597A

LESS SPACE

•

MORE COOLING



Filterpure

Model C Ceiling Unit is only 8½" High. Refrigerated air is exhausted against the back wall, resulting in positive circulation to the bottom—Equipped with air purification—Peak performance for Reach-ins, Florist Boxes, Dairy Cases, etc. Made in 3 sizes to balance ¼, ⅓ and ½ H.P. compressors.

Sold by Leading Refrigeration Wholesalers

BETZ CORPORATION

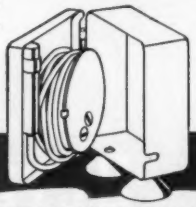
HAMMOND • INDIANA

New 4-Scale SERVICEMAN
the all-purpose thermometer

One more proof that Marsh keeps pace with your needs . . . a "Serviceman" thermometer with four scales. The illustration tells the story: Outer scale reads down to —30° F. for work on those quick-freeze units—up to +65° for the regular run of work. Other scales in differentiating colors show equivalent pressures of Freon, sulphur dioxide, and methyl chloride. So you have here the all-'round, all-purpose instrument.

All the features that have made the "Serviceman" so popular have been retained and still more highly developed. This is reflected in the bright chromium bezel which makes an effective contrast with the satin-black finish of the case. Neatly concealed in the case when not in use, is five feet of sturdy tubing, slender enough to pass between the gasket and jamb of a closed refrigerator door. Movement is guaranteed accurate within one degree and has the famous Marsh "Recalibrator" to keep it accurate. Suction cups prevent slipping on irregular surfaces and protect all finishes.

Down to the last detail this is a quality instrument—available at a moderate price that makes it a remarkable value. The serviceman is also available in standard scales and ranges, —30° F. to +65° F. and —10° F. to + 100° F.



JAS. P. MARSH CORPORATION
Dept. Q, Skokie, Illinois
Export Dept.: 155 E. 44th St., New York 17, N. Y.

MARSH
Refrigeration Instruments

BUY FROM YOUR WHOLESALER

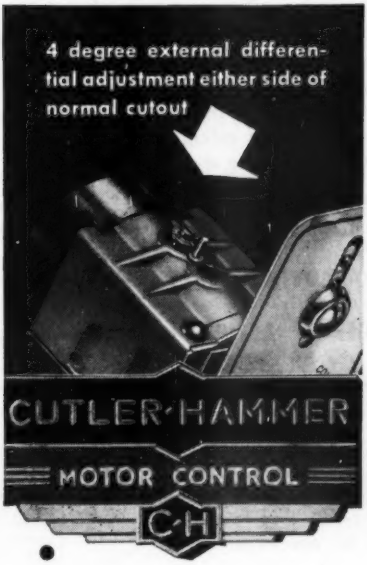
A COMPREHENSIVE LINE

Cutler-Hammer Refrigeration Replacement Control

The Cutler-Hammer line of Refrigeration Replacement Control is unusually comprehensive and complete. One unit alone, the *Universal* unit, will handle 60% of the repairman's needs. In rare cases where exact replacement control must be furnished, that item also will be found in the Cutler-Hammer line, individually packed, clearly labelled, complete with dial plate, mounting screws, trim washers and instructions for mounting, and range and differential adjustments.

The Cutler-Hammer Line of Refrigeration Replacement Controls is the product of more than 50 years of fundamental control specialization . . . another reason why outstanding refrigeration wholesalers recommend it and alert service organizations from coast to coast feature and use it. . . .

CUTLER-HAMMER, Inc., 1363 St. Paul Ave., Milwaukee 1, Wis.



This One Universal unit alone covers 60% of all needs.

← Bul. 9521N9

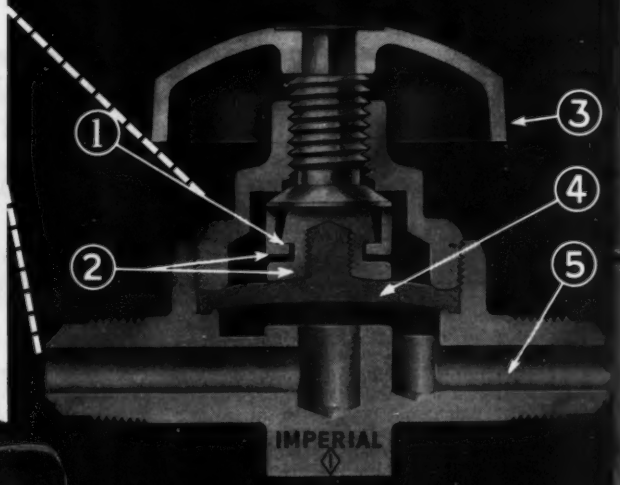
Adjustable Mounting Brackets
Maximum Mounting Centers 4-3/16
Minimum Mounting Centers 2-3/16

Adjustable Cutout Feature—Differential can be increased 4 degrees by turning indicator in "Hi" direction and decreased 4 degrees by turning in "Lo" direction.

Adjustable Range—Turning screw clockwise lowers settings and counter-clockwise raises settings.

Operating knob can be adjusted to meet various evaporator scale settings. New knob is ideal for varying shield thicknesses. Makes *this* control adaptable to wider range of single dial replacement jobs where overload is not required in unit.

No Springs ★ Either-Way Flow *



Both internal parts of the Dia-Seal lift out with the bonnet, facilitating soldering in line. Extremely low height cuts installation space.

Ask for Bulletin 103-REF

See Your Jobber

. . . *Because direct lift provides positive control

• Built along entirely new principles, the Imperial DiaSeal Valve has a sturdy, "million cycle" diaphragm that is operated by positive mechanical action in both opening and closing the valve. *No springs are used.*

Features that make the DiaSeal the outstanding valve for refrigeration service are readily apparent in the sectional view:

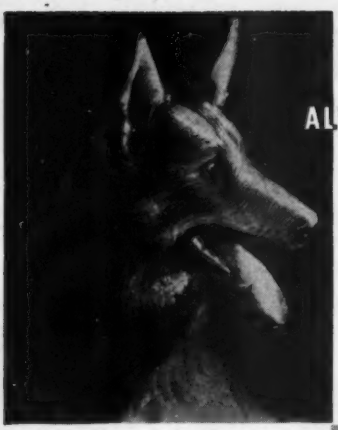
1. **NO SPRINGS**—DiaSeal Valve cannot "stick shut" because diaphragm is lifted mechanically. Positive control with flow in either direction.
2. **ONLY TWO MOVING PARTS**—Simple construction assures greater dependability.
3. **EASY FINGER-TIP ACTION**—Quick, sure opening and closing with less than two turns of handle.
4. **LONG LIFE DIAPHRAGM** is impervious to all common refrigerants. In actual tests, has withstood over 1,000,000 openings and closings under refrigerant pressure.
5. **INLET AND OUTLET PORTS IN LINE.** Simplifies installation.

Furnished in 2-way and angle types, with either flare or solder connections. The Imperial Triple Seal Groove is an added feature on flare connections ⅜" and larger.

THE IMPERIAL BRASS MFG. CO., 534 S. Racine Ave., Chicago 7, Ill.

IMPERIAL

FITTINGS • VALVES • FILTERS • FLOATS DEHYDRATORS • CHARGING LINES • TOOLS FOR CUTTING, FLARING, BENDING, PINCH-OFF AND SWEDGING.



ALWAYS

ALERT

TO GUARD EVAPORATOR EFFICIENCY:

ALCO THERMO VALVES

The large diaphragm makes Alco Thermo Valves instantly responsive to slight changes in superheat.

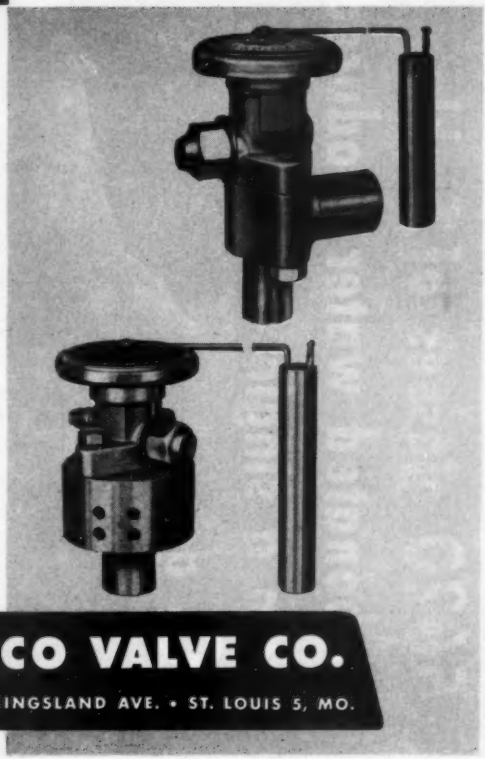
- **Precision-built for easy interchangeability of parts.**
- **Minimum moving parts for less friction, less wear.**
- **Rugged, corrosion-proof internal parts.**
- **Cupped diaphragm removes weld from flexing area—prevents loss of thermal charge.**

All these features assure a sensitive control that gives dependable service year after year.

Wide choice of capacities: ¼ to 50 tons, "Freon-12", ½ to 100 tons, methyl chloride. Multi-outlet valve gives choice of 2 to 36 outlets.

Get Bulletin 171 for single outlet, 180 for multi-outlet.

Available at your nearest Alco wholesaler.

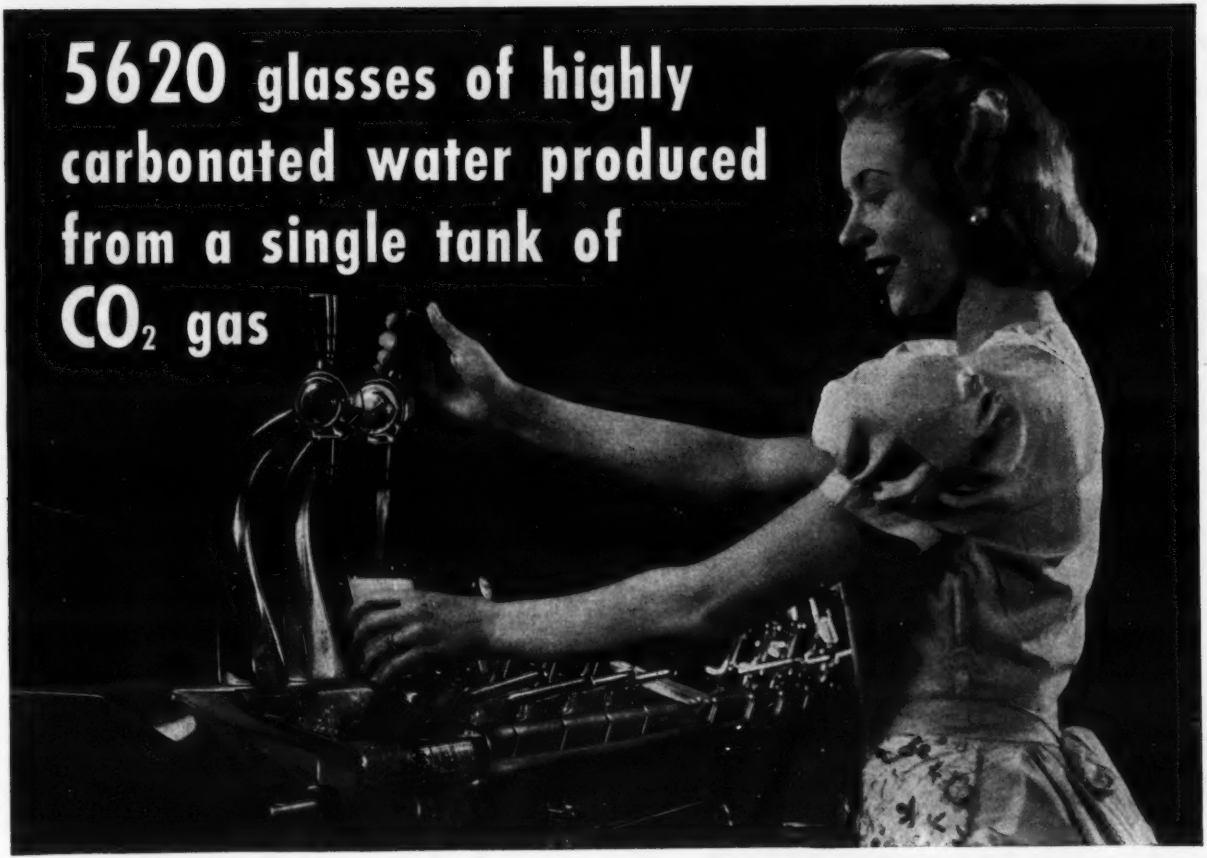


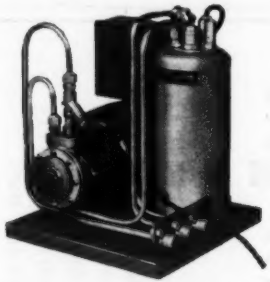
ALCO

Designers and Manufacturers of Thermostatic Expansion Valves; Evaporator Pressure Regulators; Solenoid Valves; Float Valves; Float Switches.

ALCO VALVE CO.

857 KINGSLAND AVE. • ST. LOUIS 5, MO.


5620 glasses of highly carbonated water produced from a single tank of CO_2 gas



(Above) **Model CB-305** *Temprite Packaged Carbonator, to be used with existing or separate soda cooling systems, is also obtainable enclosed in an attractive metal cabinet for installations in unprotected locations.*

Temprite Instantaneous Combination Cooler and Carbonator Unit is also available where both cooling and carbonation are required on a single installation. Bulletins available on request.

No Loss of CO_2 gas with *NEW TEMPRITE Carbonator*

Countless soda fountains and taverns have been operating for years with inadequate or obsolete carbonating equipment. Start to make new profits now in this large market. Tell bar and soda fountain owners about the new Temprite Carbonator that pays for itself in no time at all . . . pays for itself because there's no loss of CO_2 gas through vents or purging devices . . . making it possible to *actually deliver over 5620 glasses of highly carbonated water from a single tank of CO_2 gas.*

Easily and inexpensively installed, the Temprite modern packaged carbonator is completely factory assembled, ready for immediate installation and operation. Dimensions of 13″ square by 16″ in height permit installations in practically any location.

See your local Temprite wholesaler or write for complete details.

TEMPRITE PRODUCTS CORP.

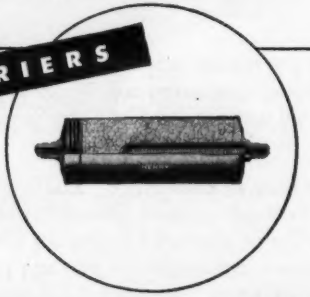
ESTABLISHED 1929

Originators of Instantaneous 80° 40° *Liquid Cooling Devices*

45 PIQUETTE AVENUE **DETROIT 2, MICHIGAN**

Have you noticed when refrigeration men get together and discuss among themselves the merits of various refrigeration and air conditioning products that those bearing the Henry name are always held in high regard?

DRIERS



● Patented features available in most Henry Driers include dispersion tube which prevents channelling in the dehydrant; the Abso-Dry Process which permits a drier to prove its dryness with a hiss; the compression spring which minimizes self-abrading of dehydrant; and the distortion proof flange on larger models which absorbs strains caused by excessive or uneven tightening of bolts. It costs no more to take advantage of these Henry features.

Sold by leading wholesalers

HENRY VALVE COMPANY

Control Devices, Valves, Driers, Strainers and Accessories for Refrigeration and Air Conditioning and Industrial Applications.

3260 W. Grand Ave., Chicago 51, Ill. • Cable: HEVALCO Chicago

For All Three

...get Kelvinator

TROUBLE-FREE PERFORMANCE!

COMPETITIVE PRICE!

USER ACCEPTANCE!

GET YOUR COPY!
Here's a new catalogue for the *quick, easy* way to buy refrigeration parts and supplies. All information and prices are grouped for easy reference. Ask for it at your local Kelvinator Distributor's or Zone Office.

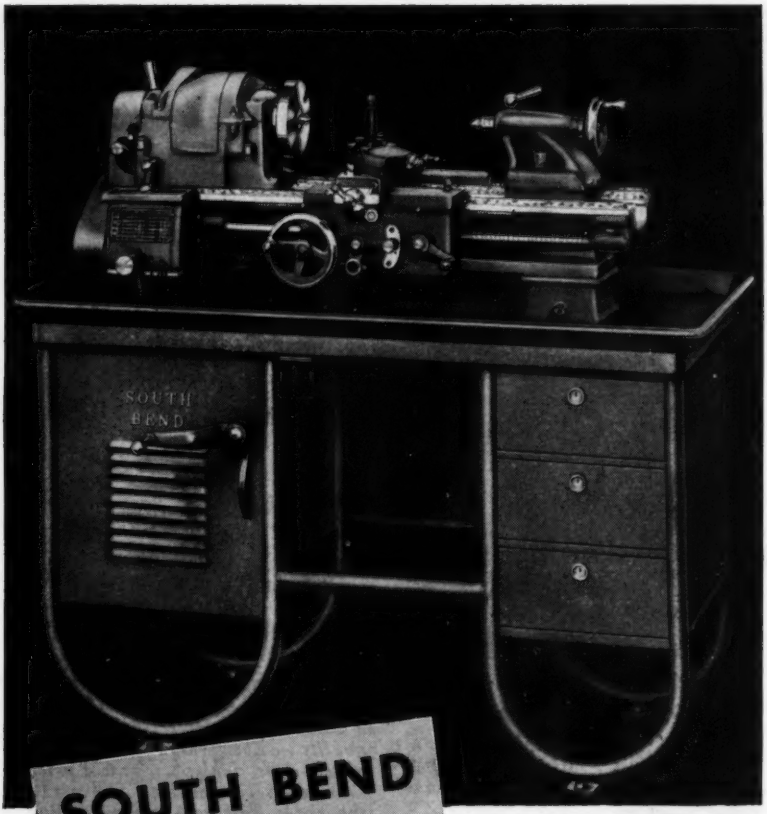
In buying condensing units, experienced servicemen like to see:—*a name that customers know means quality . . . performance that's completely dependable . . .* and *a price that meets competition.* These are the three big reasons why they choose Kelvinator!

Whatever your refrigeration requirements, call on one of Kelvinator's 50 convenient supply depots. Each carries a *complete* stock of condensing units, refrigeration parts and supplies, *competitively priced.* You'll like the fast, friendly service at Kelvinator....Kelvinator Division of Nash-Kelvinator Corporation, Detroit, Michigan.

Kelvinator

CONDENSING UNITS
REFRIGERATION PARTS
AND SUPPLIES

BUY KELVINATOR FOR ALL YOUR REFRIGERATION REQUIREMENTS



SOUTH BEND 10" LATHE

10" x 3½' Quick Change Gear Bench Lathe with 3 phase, 60 cycle, 220 volt motor and drum switch—f.o.b. factory. **$856.60**

for Faster Service Work

Prompt service work builds profitable business. This South Bend 10" Lathe can help speed-up your work appreciably. It will save time lost in waiting for replacement parts to be delivered, or for machine work being done outside. Many worn or damaged parts can be reconditioned and new parts made to original factory tolerances. This is especially helpful when servicing old model or orphan machines.

Write for catalog or see our local dealer. You will find his name under "Machine Tools" or "Lathes" in your classified telephone directory.

Also, ask about the new South Bend 14" Drill Press—it is ideal for service shops.

SOUTH BEND LATHE WORKS

BUILDING BETTER TOOLS SINCE 1906

529 EAST MADISON STREET • SOUTH BEND 22, INDIANA

CASCADE "IT'S PEERLESS MADE"

ONE OF THE BIG THREE OF 1948

BACK VIEW

SIDE VIEW

● It's new! For the first time in commercial refrigeration, radiant cooling and convection cooling are combined and the ornamental casing of a motor driven unit is utilized as cooling surface. Fins are attached to the rear of the front panel by means of the copper tubing carrying refrigerant. Warm air from the refrigerator is drawn in at the top, cascaded over coils and discharged downwardly from the face of the unit. The entire front of the unit radiates cold to products without dehydrating blasts of air. Hugging the wall, saving many cubic feet of usable space, the Cascade Cooler is perfect for reach-in and walk-in coolers. In appearance, it's a beauty of polished aluminum, complete with built-in heat exchanger and suction spinner.

Model No.	List Price	Capacities B.T.U. per Hr. at Given T.D. Between Air and Refrigerant			Motor and Fan Characteristics				Overall Dimensions Including Motor			Connections		
		1°	10°	20°	Motor H.P.	R.P.M.	Fan Size	C.F.M. Capacity	Height	Width	Depth	Liquid	Suction	Drain
68	$70.00	65	650	1300	1 100	1500	8	190	25⅛	16⅛	5	½	½	½
98	80.00	95	950	1900	1 100	1500	8	210	31	16⅛	5	½	½	½
128	90.00	125	1250	2500	1 100	1500	10	320	37½	16⅛	5	½	½	½
228	135.00	225	2250	4500	1 30	1000	12	510	41	29	8¼	½	½	½
328	156.00	325	3250	6500	1 30	1000	16	730	46½	38	8¼	½	½	½
458	198.00	450	4500	9000	1 30	1000	16	860	55½	38	8¼	½	⅝	½
608	244.00	600	6000	12000	1 30	1000	16	1050	73	38	8¼	½	⅝	½

ENGINEERING DATA ABOVE

FOR BOX TEMPERATURES ABOVE 32
FOR USE WITH FREON, METHYL CHLORIDE AND SULPHUR AS REFRIGERANT

PEERLESS

PEERLESS of AMERICA, Inc.

2801 LAWRENCE AVE. CHICAGO 25, ILLINOIS, U. S. A.

Defrosting
IS NO PROBLEM WITH
THERMOBANK
by KRAMER
Because only THERMOBANK
Keeps Coils Frost-Free
Automatically
at Any Temperature
without LABOR, ATTENTION, ELECTRIC HEATERS, BRINE OR WATER SPRAYS

WRITE FOR
BULLETIN R124

KRAMER TRENTON CO. *Trenton 5, N. J.*

SAFE

EASY WAY TO MAKE SWEAT FITTINGS

NO OPEN FLAME

IDEAL

"Thermo-Grip" used in sweat-fitting 1¼ "tubing to a strainer in installation of refrigeration system.

"Thermo-Grip" soldering set

Just grip the copper fitting with "Thermo-Grip" Pliers and it's heated to soldering temperature quickly. There's no preparation, no preheating necessary. "Thermo-Grip" operates on the resistance heating principle — gives *instant heat* — closely controlled by the handy thumb switch.

NO FIRE HAZARD . . . "Thermo-Grip" may be used with perfect safety near ceilings or walls. Safe for the operator too—all parts fully insulated . . . current reduced to a harmless low voltage.

CONVENIENT—PORTABLE . . . The Ideal "Thermo-Grip" is light in weight, easy to use—one hand always free to handle the solder. Combination power unit and carrying case provides space for tools, leads, and parts; weighs only 25 lbs. The unit is adaptable to all types of soldering jobs with "Plier," "Pencil" and "Fork" Attachments. See your Wholesaler for full details. IDEAL INDUSTRIES, Inc. Sycamore, Illinois.

IDEAL

DISTRIBUTED THROUGH

AMERICA'S LEADING WHOLESALERS

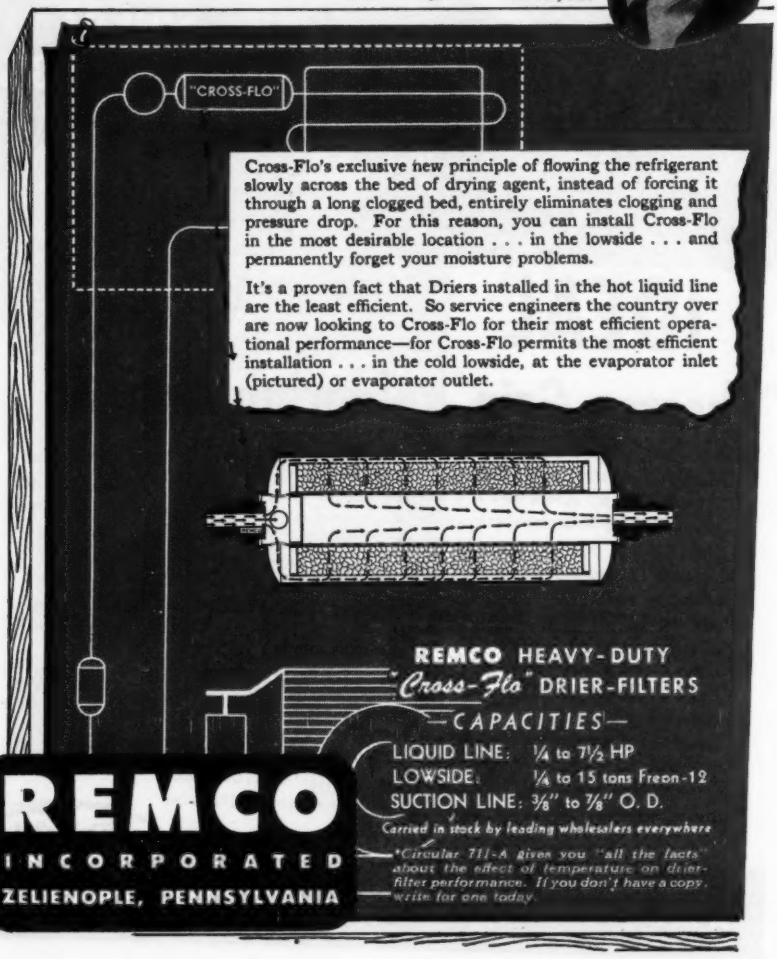
Canadian Distributor: Irving Smith, Ltd., Montreal

INSTALL "Cross-Flo" IN THE COLDEST LOCATION

. . . And solve your moisture problems permanently

"The Colder the Drier . . . . the Better the Drying Job"

says Ken Newcum, president REMCO, Inc.



Cross-Flo's exclusive new principle of flowing the refrigerant slowly across the bed of drying agent, instead of forcing it through a long clogged bed, entirely eliminates clogging and pressure drop. For this reason, you can install Cross-Flo in the most desirable location . . . in the lowside . . . and permanently forget your moisture problems.

It's a proven fact that Driers installed in the hot liquid line are the least efficient. So service engineers the country over are now looking to Cross-Flo for their most efficient operational performance—for Cross-Flo permits the most efficient installation . . . in the cold lowside, at the evaporator inlet (pictured) or evaporator outlet.

REMCO HEAVY-DUTY
"Cross-Flo" DRIER-FILTERS

—CAPACITIES—

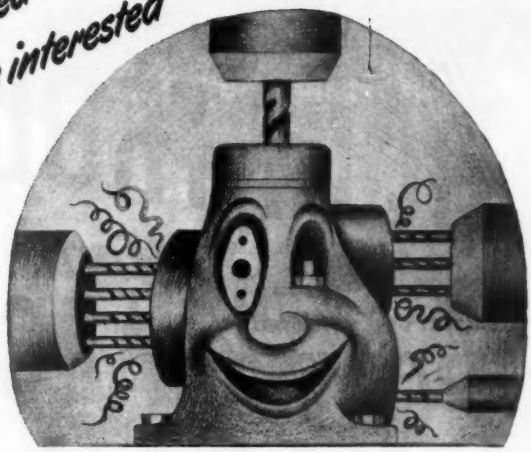
LIQUID LINE: ¼ to 7½ HP
LOWSIDE: ¼ to 15 tons Freon-12
SUCTION LINE: ⅜" to ⅞" O. D.

Carried in stock by leading wholesalers everywhere

Circular 711-A gives you "all the facts" about the effect of temperature on drier-filter performance. If you don't have a copy, write for one today.

REMCO
INCORPORATED
ZELIENOPLE, PENNSYLVANIA

"I'm being bored but you'll be interested"



. . . in these NEW
General Electric Condensing Units

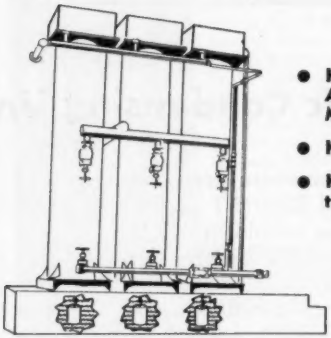
MASS PRODUCED by modern precision methods, the new General Electric Type CW condensing units have the built-in quality to carry on the General Electric tradition for dependability and economy in operation. The new design and new production methods make it possible for General Electric to offer a host of quality features—many of them never before found in small fractional horsepower units.

This line sounds a new note in the commercial refrigeration field. Smartly coordinated in design, it covers the range of from 1/6 hp to 2 hp with 8 air cooled models and includes 4 water cooled units—using only three basic compressors. *General Electric Company, Air Conditioning Department. Section 8124 Bloomfield, New Jersey.*

GENERAL ELECTRIC
Refrigeration Equipment

The CSCO AQUATROL System

A Simple But Very Efficient Device Designed To DESTROY ALGAE



- **Helps to Prevent Further Accumulation of ALGAE, SLIME, SCALE and ENCRUSTING MATTER on Heat Exchange Surfaces**
- **Helps to Increase Volume of Production**
- **Helps to Decrease Percentage of Production Cost**

In Air-Conditioning Systems, Cooling Towers, Spray Ponds, Cooling Water Circulation Systems, Air-Wash Systems, Barometric Condensers, Cooling sides of Evaporating Condensers, Ice Plants, Verticle Condensers, All Heat-Exchange Systems, Cleaning Roots out of Pipe Lines.

AQUATROL consists of chemicals in a container which is to be placed in those parts of your cooling system affected by ALGAE, SLIME, SCALE AND ENCRUSTING MATTER. Water flowing through the container is treated with chemicals which are so perfectly balanced they convert the above mentioned destructive forces into precipitates which collect in the bottom of the cooling system and are easily removed. The flow of this chemically treated water may be regulated to avoid unnecessary waste.

CSCO AQUATROL eliminates the daily dosing of water with compounds . . . and needs no further attention other than to place new tablets in the device as needed. SAVES TIME! SAVES MONEY! SAVES LABOR! Protects and prolongs the life of equipment and helps the equipment give more efficient service!

AQUATROL Outfit for small operation, $15 f.o.b. Birmingham.
For larger operations, $25 f.o.b., Birmingham

CHEMICAL SOLVENT COMPANY
3005—16th Street North Birmingham, Ala.

For YOUR Refrigeration Needs

Artic

DU PONT METHYL CHLORIDE

99.5% Pure · Dry · Uniform

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Purity . . . . . 99.5% Methyl Chloride
Moisture . . . . 0.008% by wgt. max.
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Residue on Evaporation 0.01% by wgt. max.
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HIGH PURITY! Du Pont Methyl Chloride will meet your refrigeration requirements.

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YOU'LL WANT THIS NEW BOOK— 72 pages of practical information for Refrigeration Engineers. Physical, chemical, physiological and refrigerating data . . . complete tables of thermodynamic properties . . . engineering information . . . handling and servicing methods. **FOR A FREE COPY, WRITE:** E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Del.

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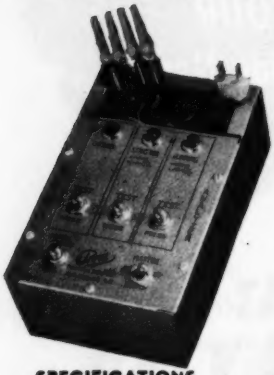
BETTER THINGS FOR BETTER LIVING THROUGH CHEMISTRY

DU PONT ELECTROCHEMICALS

MORE PROFIT—LESS TIME



ANALYZE HERMETICS WITHOUT GUESSWORK

Let Annie Do It!

HERE IS A HERMETIC UNIT ANALYZER which, in a matter of seconds, will positively indicate the nature of any electrical defect.

SPECIFICATIONS
Size: 3" x 5" x 8"
Weight: 1¾ pounds
Price: **$16.50**

Annie

- REVERSES DIRECTION OF RUN
- PROVIDES MANUAL STARTING
- INDICATES OPEN OR GROUNDED FIELDS
- RELEASES STUCK OR FROZEN UNITS—Stuck units can frequently be freed by reversing the running direction.

ACCURATE—You can estimate closely without fear of having to take a loss

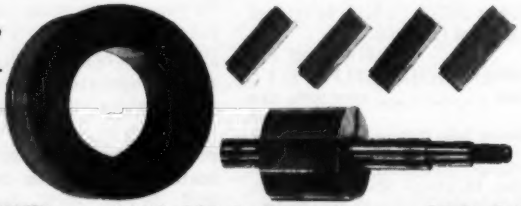
A "must" in any repair kit. Be sure you have it. Don't be embarrassed by your customer asking: "How do you know?"

COLDSPOT REPLACEMENT COMPRESSOR PARTS . . .

A complete set of matched parts ready to assemble into the original housing—designed to fit all Coldspot compressors having 15/32 inch shafts.

SPECIFICATIONS
All wearing surfaces are tool-hard.
Available in 3 sizes—
1" — 1¼" — 1½"

MATCHED SET INCLUDES:
1—Rotor
4—Vanes
1—Cylinder



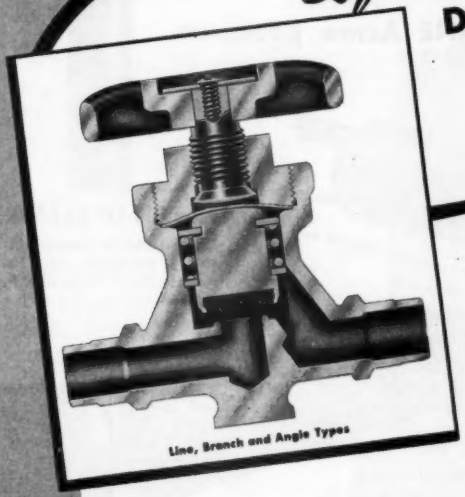
SOLD THROUGH LEADING WHOLESALERS. ORDER FROM YOUR REGULAR SUPPLIER, OR SEND DIRECT INCLUDING HIS NAME.

Matched Set Each **$14.50** Lots of 3, each **$13.80**

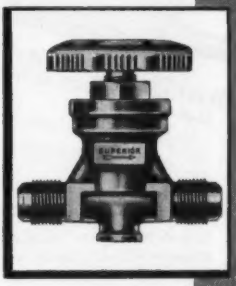
4856 LANKERSHIM BLVD. NORTH HOLLYWOOD, CALIF.

MECHANICAL ENTERPRISES DEPARTMENT 36

Life-Time DIAPHRAGM PACKLESS VALVES

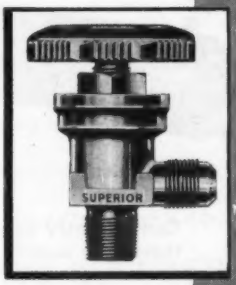


Line, Branch and Angle Types



10 FEATURES OF *SUPERIORITY*—Check them!

1—Rugged—pleasing appearance—symmetrical design
2—Wrench pads for individually tightening flare connection.
3—Unique solder connections permit soft or silver soldering—*without removing internal assembly*
4—One-piece, plated lower stem.
5—*Controlled stem travel* assures "Life-time" diaphragm performance.
6—*Controlled seating* results in "Life-time" operation
7—Large bearing surfaces—polished stem heads, and scientific lubrication assure "Life-time" performance of upper stem and diaphragm.
8—Unrestricted flow—ease of operation
9—Operates under normal pressure, with flow in opposite direction.
10—No special tools required for disassembly or reassembly



Ask Your Jobber About "Life-time" Packless Valves They're SUPERIOR!

143

Superior Valve and Fittings Co.

1509 WEST LIBERTY AVE., PITTSBURGH 26, PENNA.

OFFICES IN PRINCIPAL CITIES · STOCKS CHICAGO (6) · LOS ANGELES (15) · JOBBERS EVERYWHERE

ACME PRODUCTS

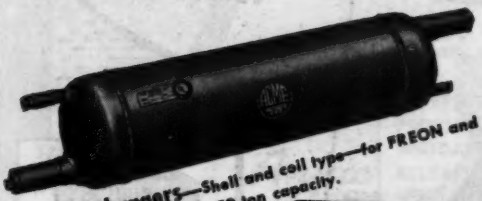
Your Jobber

CAN SUPPLY YOU WITH

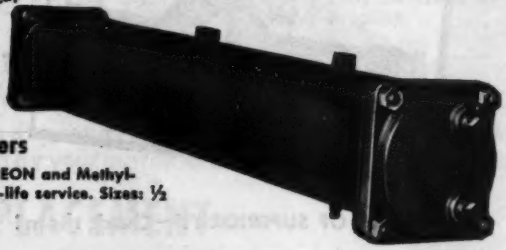
These GENUINE Acme products

Freon OIL SEPARATORS

Double filter for double efficiency. Moderate cost. Six models—¼ H.P. to 10 H.P.



Heat Exchangers—Shell and coil type—for FREON and Methyl-Chloride—½ to 50 ton capacity.



Shell and Tube Condensers

Low-cost, easy to clean. For FREON and Methyl-Chloride. Sturdily built for long-life service. Sizes: ½ to 25 tons capacity.

Shell and Coil Condensers

Efficient yet inexpensive. Extremely popular for replacement. For FREON and Methyl-Chloride. Sizes: ½ to 5 H.P.

Continuously serving the Refrigeration Industry since 1919... there is a wealth of practical experience back of these Acme products . . . now available through jobbers.

ACME INDUSTRIES, INC.

JACKSON, MICHIGAN

a new, complete, packaged
TRUCK REFRIGERATION UNIT
that you can install yourself

Simplicity of the new Kold-Hold Packaged Refrigeration Unit pays dividends for you in lower Truck Refrigeration costs. Push the Unit into the truck, bolt it in place and it's ready for operation.

Cooling cycle is started by plugging-in to any 110 volt electric outlet. You can build refrigeration in the truck wherever electricity is available. The "Hold-Over" Plates in the unit will maintain predetermined low temperature of the truck throughout a day's deliveries.

WHAT IS IT? A packaged unit to refrigerate average truck 40° to 50° temperature for a day.

HOW DOES IT WORK? Shipped complete. Push into truck, cut holes for air intake and discharge, bolt to floor and plug into electrical outlet.

IS BODY WORK REQUIRED? No, unit is adjustable to fit most any truck.

HOW LONG TO FREEZE PLATES? Ample plate refrigeration in 8 to 10 hours, under any weather conditions

HOW ABOUT LONG RUNS? Truck Contents are easily protected 2 days or longer by simply plugging-in at overnight stop.

WHAT IS OPERATING COST? Compressor operates for a few cents a day. Any refrigeration man can service.

HOW DOES IT COMPARE WITH ICE? More dependable refrigeration at less cost with no slime or bother.

IS THIS NEW? It is new only in that it is a packaged unit. Kold-Hold Refrigeration Plates have given satisfactory operation for hundreds of users for over 15 years.

Write for free literature.

KOLD-HOLD

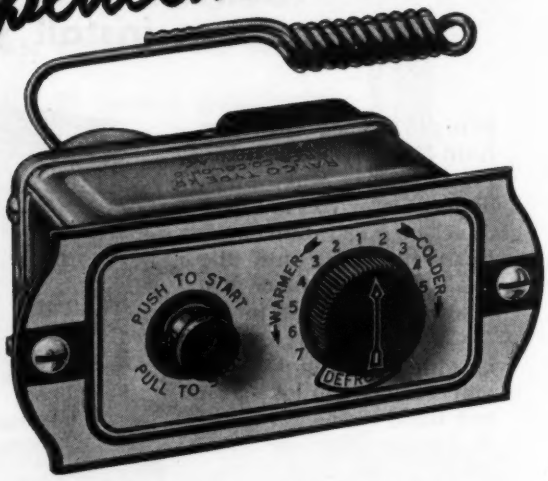
PROCESSING · TRANSPORTATION · STORAGE

protects every step of the way

Jobbers in Principal Cities

KOLD-HOLD MANUFACTURING CO., 502 E. Hazel St., Lansing 4, Michigan

For Replacements



Ranco KW-411 General Replacement Control, with adjustable mounting bracket, cable connection and outside service indicator for range adjustment.

Replace with Ranco Refrigeration Controls . . . that's the way to insure complete customer satisfaction. And it's the way to make your job easier, too—you spend less time, and make greater profits, on every replacement job. Ask your Ranco wholesaler to show you the complete line of Ranco Replacement Controls . . . models and types for general or exact replacement, for both commercial and domestic installations.

✓CHECK with Ranco FIRST

- ★ Specialists in Refrigeration
- ★ Dependability
- ★ Greater Customer Satisfaction
- ★ More Ranco Controls In Use
- ★ Less Stock To Carry
- ★ More Profit For You

Ranco Inc. COLUMBUS 1, OHIO

World's Largest Manufacturers of REFRIGERATION CONTROLS

THE REFRIGERATION SERVICE ENGINEER

The National Magazine of Refrigeration Sales, Service and Installation

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PROBLEM:
Plenty of "FREON"
No way of shipping it!

KINETIC CHEMICALS, INC.
WILMINGTON 98, DELAWARE
CABLE ADDRESS: KINETICHEM

Here are the facts about the "Freon" cylinder shortage:

1. There are 233,500 cylinders up to 145-pound size away from the "Freon" plants.
2. These cylinders have a capacity of 22,500,000 pounds of "Freon-12."
3. Deposits paid and available for refund total $3,000,000.
4. Cylinder capacity of 7,000,000 pounds of "Freon-12" was lost in 1947 because shipments exceeded return of empties. In January 1948, "lost" cylinders had a capacity of 655,000 pounds.
5. New cylinders received from all sources in January 1948 held only 188,000 pounds of "Freon-12." These were loaded and shipped in less than 3 days!
6. Cylinders on order have a capacity of 8,130,000 pounds of "Freon-12," but deliveries cannot be expected for many months because of steel shortages.
7. Of necessity, shipments have been reduced and will continue only in line with number of cylinders returned.

ONLY SOLUTION is the immediate return of empty "Freon" cylinders to: Kinetic Chemicals Inc., Carney's Point, N. J.

Transfer "Freon-12" in stock or storage into refrigerating or air conditioning equipment now. Unless empties are returned, it will be impossible to meet spring and summer demands. Kinetic Chemicals, Inc., Tenth and Market Streets, Wilmington 98, Del.

IN THIS ISSUE

PARDON OUR LATE ARRIVAL

DUE to circumstances beyond our control your copy of THE REFRIGERATION SERVICE ENGINEER has been late in reaching you during the past several months. We regret this delay and arrangements have been recently concluded to avoid a repetition of this condition. Within the next several months, we expect to resume our regular mailing date. We appreciate the consideration of our subscribers and advertisers during this period.

ACCORDING to F. J. Bommer, author of the article "Selling is Important, too" appearing on page 33, you should consider the selling phase of your business now. From all indications, post-war competition will focus more attention on distribution and you must be ready to meet a sensitive post-war public. Suggested ways of improving your selling technique is included in the article.

COMBINING the sales of frozen foods with rental of freezers result in the sales of many freezers for one firm in St. Louis. How it is being done is told in the story "Rental Plan and Stocking Service Sells Home Freezers" appearing on page 37.

A NEW packaged type of frozen food locker plant is now being marketed for use in retail markets and groceries. A description of the equipment appears on page 39.

IF YOU run out of gas ten miles from nowhere, try riding home on your Prest-O-Lite tank. That's what one serviceman did. Read about it in Service Pointers, page 45.

A DIRECTORY of Repair Services appears on page 82, which is intended as a convenience for the readers who send out their compressors, motors, hermetic units and other parts for repair. The directory provides the nearest repair service to your locality.

A NEW packaged type truck refrigerating unit and a new hermetic condensing unit are only two of the new or improved appliances this month.

TWO new product section groups within REMA give promise of greater future standardization which should benefit the service field as well as the manufacturers. The article appears on page 106.

COVER

DESPITE extremely high temperatures in the surrounding area, the operator of this 185-ton ladle crane at the Jones & Laughlin Steel Corp., Aliquippa Works, is kept comfortable because his cab is air conditioned. Six other crane cabs at Jones & Laughlin also are equipped with air conditioning units. They are necessary not only as a means of reducing the excessively high temperatures in the crane cab but also as a means of removing noxious fumes and gases. See the complete story on this application of air conditioning on other pages of this issue.

Your Equipment is NOT COMPLETE without . . . .

THE MIDGET PURGER

The Midget is the companion or sister product to the Little Giant Purger. The Little Giant, previously introduced, is for purging the larger units, but the Midget is a low cost, water cooled purger designed for economical operation for the smaller or fractional units up to 10 hp.

The Midget Purger provides positive and complete purging of the refrigerating system with minimum loss of refrigerant.

HERE ARE THE ADVANTAGES OF PURGING WITH THE MIDGET PURGER

THERE IS NO GUESSING—By bleeding off the gases through the purge valve until the liquid rises to the top, you have a positive indication when purging is completed.

MINIMUM REFRIGERANT LOSS—The air in the system is completely separated from the refrigerant before the purge valve is opened.

SIMPLE TO OPERATE—All operating valves easily accessible. Not necessary to check pressures or temperatures. No need to shut down the system.

POWER SAVINGS—Power savings, due to a reduction in head pressure will pay for the "MIDGET PURGER" many times over.

MANUAL OPERATION—Fully manually operated, there is no possibility of a slow leak developing which would cause a loss of refrigerant before the trouble is located.

ORDER THROUGH YOUR WHOLESALER

MUELLER BRASS CO.
PORT HURON, MICHIGAN

Selling Is Important, Too

By F. J. BOMMER*

BEING refrigeration engineers it would only be natural that your papers would be dominated with technical discussions of the subject. This is rightfully so. However, refrigeration engineers and technicians have grown in statue as a whole. The type of work you perform has enlarged to the extent that coupled with your technical thinking it seems necessary to give much thought to the business and selling aspects of your profession.

A few years ago practically every service engineer was an employee of some large company. The service problems of such companies were viewed by their management as an evil which was forced upon an otherwise pleasant and profitable business. Service engineers were required to perform the minimum amount of work in order to keep Mr. and Mrs. Jones satisfied, at least to the extent where they continued to make their time payments or the factory guarantee expired.

Today most of this has changed. Thousands of well established refrigeration engineering and service companies have not only proven a valuable asset to the public but have expanded to the point where they engineer and sell a tremendous amount of all refrigerating equipment. This has made it necessary for you technical men to enter the business field. Likewise, and most important, you have entered the selling field.

For the sake of being definite, I shall assume that you are personally doing business with, and selling directly to the customer. My purpose is not to tell you how to sell a refrigerator or a specific piece of refrigerating equipment, but to point out a few basic principles of selling in order to stimulate your thoughts as you tackle your personal problem of more efficient business and selling.

Some of you no doubt employ salesmen, but the problem of choosing and training salesmen is quite a different story. Most of you have come into this business because of your interest and ability in the technical side, and not because you were salesmen. Therefore, training yourself for selling when your main ability is technical, becomes more difficult than training someone else who is chosen with his selling potentialities as a prerequisite.

A most timely paper, because it comes just as the best part of the selling season is about to open up, is this one which stresses the importance of selling and provides a definition of good salesmanship. Salesmanship, according to the author, is the art of getting people to do what you want them to do. The author also provides some pointers on developing this art.

You should consider the selling phase of your business now for four reasons:

1. We must differentiate between pressing problems and important problems. We solve pressing problems from day to day. The problems of records, taxes, statements, labor, complaints, stock replacements, and inability to get scarce materials and components for daily requirements are pressing problems. But to solve an important problem we must sit back, take stock, get perspective, evaluate and plan before we work on it. Otherwise our view will be short-sighted and our efforts ineffectual. I believe selling is one of your important problems. You should face it now when you have the time—when you can get back from the trees so you can see the woods.

* Vice-President, Sanitary Refrigerator Co., Fond du Lac, Wis. Paper presented before RSES Wisconsin State Association meeting.

2. From all indications, post-war competition will focus more attention on distribution. Witness government plans to aid veterans in establishing small businesses, and its avowed purpose to aid small business in general. Will this development affect you? Your thinking must be done now if you are to act intelligently when the impact comes, when competition levels off and money is not plentiful.
3. There seems to be a definite trend toward smaller profit margins in post-war thinking with just as definite a trend toward higher post-war labor compensation. This can only mean volume business which demands more efficient selling. How will this trend affect your business? Your thinking must be done now if your business is to mesh gears smoothly with the trend.
4. You must be ready to meet a sensitive post-war public—a public which, aside from being frustrated by the restraint imposed by war itself, has been insulted, humiliated, and generally shoved around by just plain cussedness in a sellers' market. Elmer Wheeler, nationally known lecturer and writer on sales problems, pointed out recently that we must be ready for a revengeful post-war public. It appears to me that now is the time to think about selling under these conditions.

Salesmanship Defined

Salesmanship is persuasion, the art of getting people to do what you want them to do. Salesmanship is getting people to take action when it was not their intention to act. Anything else is order taking.

When I was a sophomore in high school, I started to work in a men's clothing store. The manager pointed out that if a man came into the store intending to buy only a necktie, I took an order when I wrapped it up, but if he went out with two neckties plus a shirt, a belt, and three pairs of socks, I had made a sale.

This idea on a larger scale is illustrated by the case of a small town druggist in the West who was selling camera film in a volume out of all proportion to the accepted buying potential of the town he served. Always alert to selling ideas, the company which manufactured the film investigated these phenomenal sales. The answer was simple. When a customer brought a film in to be developed, the druggist laid a new one out saying, "You'll want a new one in your camera of course. Thirty cents, please." If five films came in, five new ones usually went out. This idea, the difference between order taking and selling, adapted on a nation-wide basis, resulted in a tremendous increase in the sale of films.

You are probably saying that is all right but we are not selling neckties or films, we are primarily refrigeration service engineers. That is true. However, it is also true that in a big majority of instances you have the greatest barrier removed from the path of any sale. I refer to the invitation you receive to contact a potential customer. Most of the time through service calls and installation of new equipment you are called upon by someone to render assistance and advice. The door is opened which gives you the opportunity to make a sale.

Sell Your Service

The technical phase of refrigeration is still a mystery to average Mr. and Mrs. America. The fact that you are asked to perform a service establishes a feeling of confidence on the part of a customer. You should meet such confidence, not by patching up some job to merely make it operate, but to create first, a very satisfied customer, a booster for your business, but secondly, meet such confidence business mindedly, salesmindedly toward building an enlarged business, and greater sales for yourselves. You understand all the latest developments. You know best what will give them the most satisfactory and efficient refrigeration. You can be their best advisor. Make it a point to suggest additional service or equipment that will give them more utility, more satisfaction, more efficiency from their equipment. You will be surprised at the additional sales that will result from such effort.

"All right," you say, "I'm convinced that I should give the selling problem prime consideration. Where do I start?" Well, let's start with your public relations. Give the public more of what it likes and less of what it dislikes. Let

us be specific. Have you ever received a business letter that irritated or made you angry? How do your letters affect your customers? Remember that the written word can have neither the inflection of your voice, nor the clothing of your personality to soften it's naked meaning. You can gain a customer or lose one with a single letter. It might be well to check the tone of your letters.

How do you bill people? Is there anything negative about your advertising? How about that delicate subject of service replacements? The test of your procedure is whether or not you can gain your business objective with the least amount of customer irritation. Do the people working for you represent you? If they injure your relations with the public, your business will certainly be affected.

The second phase of selling to consider is your knowledge of the business. Keeping abreast of new developments not only widens the possibilities in your business, but it leads to more efficient service to your customers.

Keep Customer Informed

Some refrigeration service companies I know send a monthly bulletin to selected customers, which gives pertinent information on such subjects as care of their refrigeration during the hot weather, during extra cold weather, oiling if necessary, care of the condenser, reminders on defrosting. Also seasonal food suggestions and special recipes. This procedure is definitely a positive selling factor.

Without reservation, I submit to you that prestige is the greatest single aid to your business and selling. What do people think of you? What is your reputation as a man? As a refrigeration service engineer? As a business man? What Mrs. Jones says to Mrs. Smith about you across the bridge table is vital to your business. What Al Brown says to Joe Black about you on the golf course is important to your business. What Yurkovitch says to Dowling across rake handles in the back yard exerts a real influence on your business. What are your business ethics? What do your competitors think of the way you conduct business? Unfair price cutting based on furnishing undersized, inadequate equipment or taking advantage by performing makeshift service will only serve to ruin prestige. Such tactics are only expedient and sooner or later will lead to disaster. If your reputation is right, all the other factors are bound to be right.

A fourth factor in selling is the degree to which you know and cater to human nature. People want ego recognition. They like praise. They like to have others interested in them and in their accomplishments. Learn to like people and they will like you.

People are not punctual but they like punctuality. You can avoid a great deal of customer irritability by just making sure that you either keep appointments or notify the customer of postponement or cancellation in time to avoid time-loss for him.

People like to have a business deal finished properly. This applies to both the transaction and the payment for it.

People do not like criticism of their judgment. The more arguments you win, the more sales you lose. The words "no" and "you're wrong" are not in a good salesman's dictionary. Disagree if you must, but remember it's not the act but the method that irritates. Respect the customer's ability to have a thought of his own. Persuade and lead. "Yes, I see what you mean, but here is a thought—". This allows him to save face and at the same time come to your way of thinking.

Appearance Counts

People like a pleasant attitude and a pleasing appearance. Naturally you can't work on mechanical equipment and dress like a preacher at the same time, but possibly your wife has a point when she suggests a clean shirt or a new haircut some morning.

People like a firm handshake. Neither a "dead fish" handclasp nor a "bone-crusher" is pleasant. Remember the function is to help build a friendly feeling.

People like a two way conversation. By letting the customer talk you not only find out what he's thinking, but many times he will talk himself into doing the very thing you want him to do. A good salesman knows when to listen.

On the whole, people dislike to hear you knock competitors even though they

gripe to you about them, and even though the competitors have it coming. Build yourself and let the customer do all the knocking.

People many times offer objections only to be reassured at a time when they have decided to buy. They want their judgment confirmed before they commit themselves. To sell efficiently, you must recognize this basic trait in human nature.

People many times will hide the real objection by giving another. One man objected to a certain refrigerator on the basis of its being too noisy, but the real reason lay in the fact that his bottles of beer didn't fit into the shelf space well enough to suit him. You must look for, and answer the real objection in order to make the sale.

Most people are procrastinators. The salesman must lead the customer to buy now.

Human beings are imitators. They have an inner urge "to keep up with the Joneses." To realize the existence of this trait and to motivate through it helps to make for more efficient selling. These, then, are some of the traits in people that we, as businessmen, as salesmen, must recognize and cater to, in helping them to buy our goods.

Know Your Customer

The fifth factor in the selling end of your business is the development of your knowledge of what makes people buy. We know that most people buy emotionally. Likewise, we know that one of the most impelling of inner feelings in people is their pride of ownership. Witness the enthusiasm with which a man points to his new automobile, to the housewife who dotes over her refrigerator or freezer. How often we hear husbands bragging about the fine cooking served by their wives, with what ease she preserves and prepares their food, how much money they are able to save because of their new refrigerator or freezer, or because Jim Brown repaired or improved their present equipment. We could continue with the storekeepers who have more attractive displays with less spoilage, the tavern owner whose beer is just the right temperature. Time does not permit us to go too far into the details. You who are in the refrigeration business are extremely fortunate to be dealing in products so close to this inherent nature of people. Appeal to this inner urge and it will help you to sell.

People buy to fulfill a need or solve a problem. They don't buy because you sell, but because what you sell represents the means of solving their problems.

People buy from those who show enthusiasm for what they are selling and who can make others enthusiastic enough to buy it and try it.

People buy when their objections are answered convincingly, but agreeably.

People buy when it is made easy for them financially. Installment buying, for instance, is an example of this point.

People buy when they have confidence in the salesman and in the organization he represents.

People buy from the salesman who practices what he preaches. This brings to mind the necessity for having your place of business represent what you're selling. If, for instance, your place of business, whether your store, your factory or your shop is neat, it is a good indication your work will be neat. If you handle your business in an orderly manner it will demonstrate an efficient and orderly transaction.

To summarize—if you will visualize selling in its proper perspective; if you will think on the importance of public relations and prestige and then BUILD; if you will think on the importance of keeping up professionally and then LEARN; if you will think on the understanding and catering to human nature and then WORK AT IT; and if you will think about what makes people buy and then HELP THEM; the results are bound to give you proper payment for your effort in training yourself for better business and better selling.

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MOISTURE TRANSMISSION

THE mechanics of moisture transmission and diffusion are not yet clearly understood. The determination of transmission factors has not yet progressed to the point where resistance factors can be employed in the same manner as heat transmission data. Some information has been published on factors of this sort, but their use has been found to be unsatisfactory.

Rental Plan and Stocking Service Sells Home Freezers

By BERT MERRILL

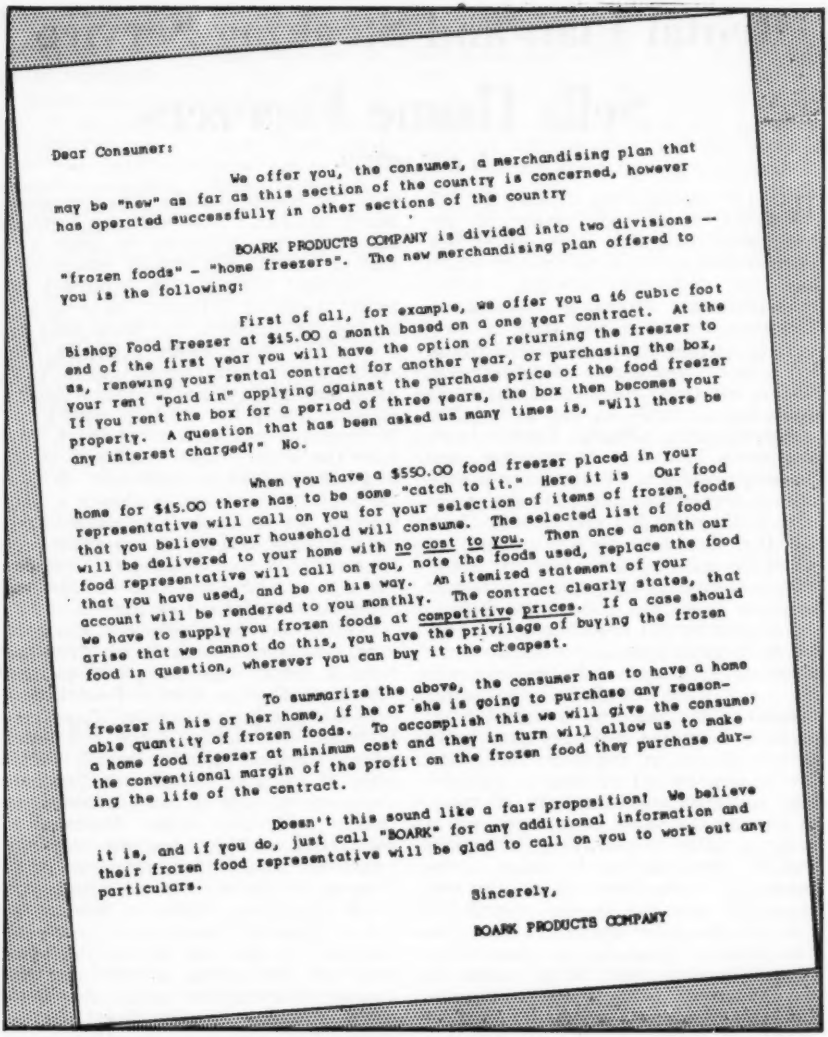
BOARK PRODUCTS COMPANY, St. Louis, home and commercial refrigeration dealership, is one of the few refrigeration firms in the country which has six full-time salesmen actively selling and collecting commissions. The firm opened a new store in July next to its previously established frozen foods store, and carries Frigid-Freeze, Bishop and Orley commercial and home quick freezer boxes, as well as Sun-Roc water fountains, General Electric home appliances including refrigerators, and Schaeffer products. With an ample supply of freezers coming through, partners William Boland and George Clark feel that they have already snapped up all of the seller's market business available, and are out aggressively selling in both the home and commercial field.

The commercial field has been opened up through assiduously smoking out every potential user of frozen food cabinets, according to E. R. Schaefer, sales-manager. "We made up a list of retail grocers, including anything from tiny corner stores to super-markets, and are calling on all of them," he said. "We don't expect to sell all of them, of course, but have been surprised at what a little concentrated promotion will do. Every grocer, it apears, is interested in frozen foods selling, and will eventually buy the freezer to make it possible. We offer them 14, 16 or 20-foot freezers, guarantee to teach them to merchandise their frozen foods on the background of their own experience, and create advance goodwill. Most of them can't or won't buy now, but half an hour spent talking it over will produce plenty of business in the future."

By far the biggest sales volume accomplished has been in the promotion of 20-foot home freezers, according to Schaefer. Prospects for these $695 boxes are being developed in several ways. Many such sales are the result of the customer having rented a smaller freezer, buying it, and then finding it insufficient for the amount of frozen foods he wants to keep. Since opening, Boark has had a plan whereby customers could rent a Bishop 16 cubic foot freezer for $15 per month, which will be stocked with a $50 inventory of frozen foods at delivery; the company billing the customer for those used on a monthly check. Every customer who rented a box wound up buying it. Now, more than half are interested in a larger-capacity model, for which the $695 Frigid-Freeze 20-foot variety is perfect. "We take the smaller unit in almost at its original price less depreciation," Schaefer said. "Since there is always a long waiting list of people who want to try out the rental system, we can either rent it or sell it at near new price." Replacement, thus, is the No. 1 source of customers for the 20 cubic foot size.

One of the most effective ideas, in turn, developed by the Boark firm, has been a clever mailing piece entitled "Do You Want to Rent a Food Freezer?—Boark's Story Is Inside!" Completely frank, the mailing piece is a letter which explains Boark's novel rental plan. It explains that Boark Products Company is split in two divisions, of frozen foods and home freezers. It points out candidly that the company wants the commercial margin of profit on quick frozen foods. "We offer you a 16 cubic foot Bishop Freezer at $15.00 a month based on a one year contract. At the end of the year you will have the option of returning the freezer, renewing the rental, or purchasing the box with your rental paid in against the purchase price. No interest is charged."

Results of 8,000 of these mailed out has been more than 1,000 interested prospects, according to Schaefer. "We go a little farther now in offering rentals on various sizes," he said. "We can supply the small freezer for $7.50 per month, 16 cubic foot for $15.00, and the 20-foot model for $17.50. We split the incoming requests among our six men, and each has beeen given credit for rent-



Dear Consumer:

We offer you, the consumer, a merchandising plan that may be "new" as far as this section of the country is concerned, however has operated successfully in other sections of the country

BOARK PRODUCTS COMPANY is divided into two divisions — "frozen foods" – "home freezers". The new merchandising plan offered to you is the following:

First of all, for example, we offer you a 16 cubic foot Bishop Food Freezer at $15.00 a month based on a one year contract. At the end of the first year you will have the option of returning the freezer to us, renewing your rental contract for another year, or purchasing the box, your rent "paid in" applying against the purchase price of the food freezer If you rent the box for a period of three years, the box then becomes your property. A question that has been asked us many times is, "Will there be any interest charged?" No.

When you have a $550.00 food freezer placed in your home for $15.00 there has to be some "catch to it." Here it is Our food representative will call on you for your selection of items of frozen foods that you believe your household will consume. The selected list of food will be delivered to your home with no cost to you. Then once a month our food representative will call on you, note the foods used, replace the food that you have used, and be on his way. An itemized statement of your account will be rendered to you monthly. The contract clearly states, that we have to supply you frozen foods at competitive prices. If a case should arise that we cannot do this, you have the privilege of buying the frozen food in question, wherever you can buy it the cheapest.

To summarize the above, the consumer has to have a home freezer in his or her home, if he or she is going to purchase any reasonable quantity of frozen foods. To accomplish this we will give the consumer a home food freezer at minimum cost and they in turn will allow us to make the conventional margin of the profit on the frozen food they purchase during the life of the contract.

Doesn't this sound like a fair proposition? We believe it is, and if you do, just call "BOARK" for any additional information and their frozen food representative will be glad to call on you to work out any particulars.

Sincerely,

BOARK PRODUCTS COMPANY

Boark Products Co. mailing piece which is titled on reverse side, "Do you want to rent a Food Freezer?"

als or sales originating in their territory. After the customer has been using the smaller box for a year, the chances are she will want a larger unit."

Once a prospect's name is entered on the Boark list, the company periodically sends out complete frozen foods price lists incorporating some 240 items on sale at any of the four stores. Constant receipt of these stimulates the desire of the average housewife to give frozen foods a try, thus paving the way for freezer sales. "In this way every small home freezer sale is preparing the ground for the big $700 unit," Schaefer summed up.

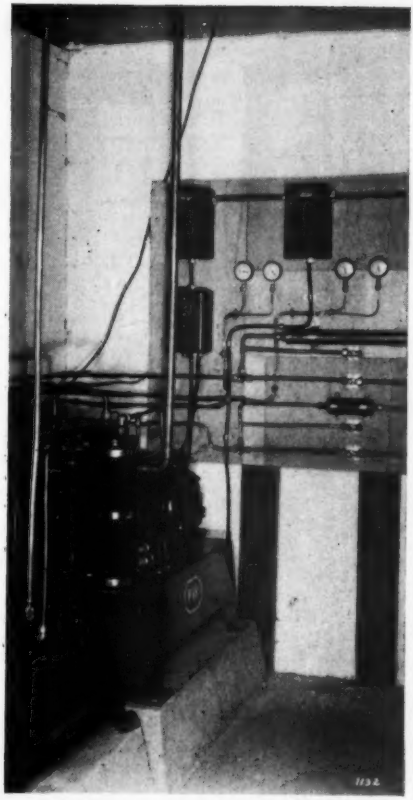
Pre-Fabricated Lockers for Small Plants

SOMETHING new in the locker field has been devised by G. R. Overton, Seattle, Wash., who is marketing a prefrabricated frozen food locker system which is shipped as a packaged unit for installation in groceries, meat markets and other food stores for rental to customers on a yearly basis.

Each unit stands eight feet high, is four feet deep and six feet one and one-half inches wide, with a capacity of 120 cu. ft. of storage space. These units are divided as desired into 20 lockers with a capacity of six cubic feet each, 16 lockers of 7 and one-half feet each, or 12 lockers of 10 cubic feet capacity. There is a door on each side of the units which gives access to the individual lockers.

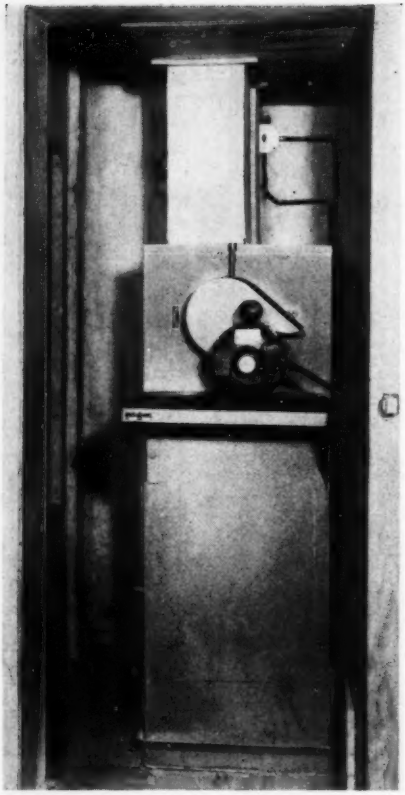
The units are shipped flat for assembly and installation in the food store and may be erected in any type building. For purposes of financing, the units are treated as chattels. A maximum of 16 units, holding 320 individual lockers, plus sharp freezing and equipment sections, may be installed in one hour. The locker sections are all-metal with six inches of insulation between them and the outer walls. The cabinets themselves are of three types: varnished waterproof plywood, clear plastic plywood, or aluminum.

The pre-cut lockers are sold in four-foot units consisting of 120 cubic feet of storage space. They are eight feet high, four feet long and six feet one and one-half inches wide. Each unit is divided into 20 six-cubic foot lockers, 16 seven and one-half cubic feet, or 12 lockers of 10 cubic feet capacity.



Baker Ice Machine Co. compressors utilize Freon or ammonia, with capacity ranging from one and one-half to seven and one-half horsepower, depending upon how many locker units are to be served.

Temperatures of the storage lockers is held at from minus five degrees to zero. The sharp freeze unit is eight feet high, six feet wide and four feet long, with eight to 12 inches of insulation between the inner and outer walls. Tem-



This view of equipment section of locker system shows Marlo blower unit and air supply duct which leads upward to locker sections.

erature here ranges from 30 to 40F below zero.

Cooling is accomplished by a Baker Ice Machine Co. compressor utilizing Freon or ammonia. Size of the compressor installed depends, of course, on the number of units to be served and ranges from one and one-half to seven and one-half horsepower. In the Seattle area, for example, a five horsepower compressor will serve the maximum single installation of 16 units.

A Marlo floor-type blower sends the air from the cooling units through supply ducts which enter the lockers from above. The cold air leaves the duct through a control damper and flows down the four sides of the lockers, following the corrugations of the aluminum lining, and enters a return duct at the bottom of each locker section to return to the cooling unit. Air pressure within the lockers is kept equal to that of the food store to assure no loss of cold air when the locker doors are opened.

The lockers, a product of George-Ann Company, are sold through franchised dealers, with Baker Ice Machine Company handling sales. The cost to retailers is $45 per unit, with rentals by food stores about as follows: $15 per year for a locker of six cubic feet capacity; $18 per year for a seven and one-half cubic foot locker, and $24 a year for a locker of 10 cubic feet capacity.

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ASRE 35TH SPRING MEETING

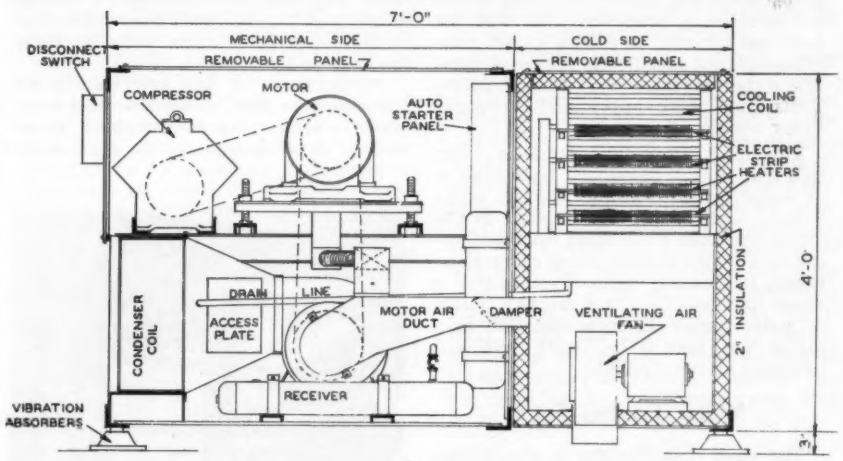
NINE technical papers on as many fields of refrigeration will be the feature of the 35th Spring Meeting of The American Society of Refrigerating Engineers to be held in Swampscott, Massachusetts, May 31 to June 2, 1948. The Boston Section of the Society will act as host for the occasion.

Headquarters for the meeting will be the New Ocean House which overlooks the Atlantic Ocean. The recreational facilities at the hotel will be a special attraction to ASRE members and guests . . . golf, tennis and every recreational feature that appeals to riding, boating, fishing, and archery enthusiasts.

The nine papers scheduled for the technical program will be presented in three morning sessions on Monday, Tuesday, and Wednesday. These will include several on recent developments on heat transfer techniques, detailed description of the new "sniffer" type refrigerant leak detector and a paper on ultra low temperature installation. The technical program is under the direction of C. M. Ashley, Carrier Corporation engineer and 1948 ASRE Program Chairman.

Swampscott, a suburb of Boston, frequently referred to as the "Eden of New England", is the home of the Swampscott dory. Near this city is Marblehead, a town of beautiful Colonial homes and New England's yachting center and the quaint historic town of Salem.

Air Conditioning a Crane Cab



Profile view of a standard Dravo Crane Cab Cooler shows how it is divided into two sections—the mechanical side and the "cold side." Refrigeration equipment, compressor motor, contactors and starters are in the mechanical compartment and cooling coils are located in the cold section.

INDUSTRY long has been aware of the extreme conditions under which operators of cranes handling hot metal have to work. Not only do temperatures in the crane cab become exceedingly high, but often there also are noxious fumes, gases and dust.

Large fans were first used in the cabs, but about all these succeeded in doing was to change the air—hot air for hot air. They gave practically no cooling effect and, of course, did not remove the dust and fumes. Later attempts were made to control these conditions by hanging wetted burlap over the intake of the fan. This lowered the temperature a few degrees, but it still was much too hot in the cab. Besides, this practice did not eliminate the gases and fumes.

Not only was the practice comparatively ineffective, but it was costly in wasted time to keep sufficient water in the cab to wet down the burlap. The great volume of hot air passing through the burlap dried out the makeshift filter quickly.

To improve upon this, cakes of ice were placed in a specially built chamber and the air was blown over them and into the cab. Besides being comparatively inefficient and incapable of cooling the air sufficiently, this practice added the serious problem of disposal of water resulting from melting ice. This water dampened the electrical equipment and dripped down on the hot metals being handled. In addition, the hot air blown over the ice melted it quickly and it was necessary to stop the crane often to replenish the ice.

When "dry ice" became commercially available about twenty years ago this was tried in place of ice because it did not drip water and lasted a little longer than ice. At that time some special cabs were built with dry ice compartments, built-in ducts, fans and dust filters. It was the first attempt to build "air conditioning" into a crane cab as an integral unit. Neither this system, nor any that preceded it, offered any control over the temperature in the cab and none attempted to remove the fumes or gases.

Considerable improvement over earlier methods was effected with the introduction ten or twelve years ago of air conditioning units employing water for condensing purposes. This was the first real attempt to design an air conditioning unit specifically for crane cabs. While better than the earlier makeshifts they were bulky and comparatively inefficient.

The most important troubles from this type of unit developed from the use of water for condensing. First, a water storage tank had to be mounted on the crane. This had to be filled intermittently and thus there were many crane stoppages. It also was necessary to install a water line near the crane rail as a source of water supply. In some installations a pump was needed to insure sufficient pressure at that height.

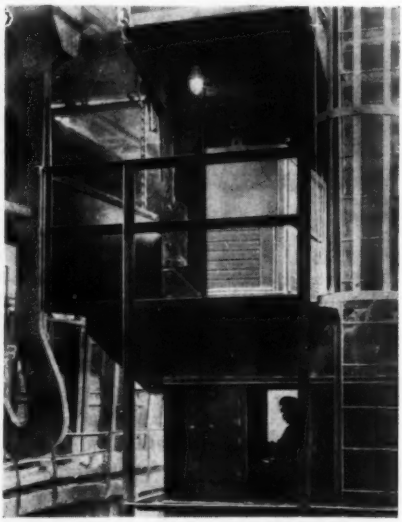
Water Cooling Fails

The chief disadvantage in this equipment, and an inherent one, was that the water in the storage tank absorbed heat from the high-temperature air surrounding the cab. The water became so warm that it was almost impossible to condense the refrigerant. In attempting to do this, the unit had to operate at high pressure, causing piping connections to break. The compressor motor had to operate continuously in its endeavor to satisfy the demands made upon it by the thermostatic controls. Burned out motors and other electrical equipment resulted from this overwork. The use of cooling water in this equipment increased the moisture in the sulphur-dioxide-laden air and this in turn increased corrosion. The wet surfaces also collected dust and dirt and fouled up the equipment.

The cost of operation and maintenance of this type of unit, together with the fact that it only partially accomplished its purpose, caused industry to lose interest in water-cooled equipment.

But the need remained for a practical method of air conditioning the cabs of cranes that operated in high temperatures. In 1943, Dravo Corporation of Pittsburgh marshalled its years of engineering experience to solve the problem. An installation was made that used air as a condensing medium and required only electrical connections for operation. This installation was made on a crane operating over lead vats and fume removal equipment was incorporated. The need for water, water storage tanks and piping, with their attendant high maintenance costs and lost time, was eliminated.

Performance of this first installation led Dravo to start production of a completely self-contained standard crane cab air conditioning unit for general industrial use.



Close-up shows how Dravo Crane Cab Cooler is mounted on top of crane operator's cab.

The first of these units was installed two years ago on a 185-ton ladle crane in the Aliquippa Works of the Jones & Laughlin Steel Corporation. Although air surrounding the crane is 140°, that within the cab is held automatically and continuously at 80°. This plant has operated on a 24-hour-a-day schedule for many months of that two-year period, but even under these conditions there has not been a single breakdown or failure and no maintenance except normal replacement of filters. To test the cooling capacity of the unit, the temperature within the cab was held for a period at 51° while the crane was in normal operation.

Since the installation of this first cool-

er, Jones & Laughlin has installed Dravo coolers for two other ladle cranes, three soaking pit cranes and a converter crane. These Dravo units are also equipped with heaters for warming the cabs in winter and with filters for removing dust and fumes.

Where extremely high temperatures exist in the crane cab working zone it has been found advisable to insulate the cab. In all installations, the cab, or that area in which the operator works, should be totally enclosed. At Jones & Laughlin the roof and walls are insulated with three inches, and the floor with three and one-half inches of fibre glass. In addition, a steel heat shield is suspended six inches beneath the floor of the cab. The complete, self-contained cooling unit is seven feet long, two and one-half feet wide and four feet high. It is mounted directly on top of the cab, thus eliminating all duct work.

Where working zone temperatures no higher than 125 degrees exist, the crane need not be insulated because the unit has sufficient cooling capacity.

Besides the installations at Jones & Laughlin, the coolers are being used in other plants on electric furnace cranes, forge shop cranes, and ladle and soaking pit cranes. The Ford Motor Company has installed a cooler on the cab of a new full-vision 250-ton stripper and extractor crane.

The Dravo crane cab cooler uses Freon 114 as a refrigerant instead of Freon 12 that usually is employed in air conditioning systems. Freon 114 was selected because it has a considerably higher boiling point than the other and thus permits a lower operating pressure under the extreme conditions of high ambient temperatures.

Not only is the air that enters the cab filtered twice, but twice-filtered air also is used to ventilate the motors. Dust-free ventilating air for the motor reduces wear on the brushes and moving surfaces. The cooler circulates 400 cfm of air through the cab. Three-fourths of this is recirculated, while the balance is make-up air brought into the unit through two filters and activated carbon cannisters for removing fumes.

An air diffuser is installed in the top of the cab and therefore no duct is required. The diffuser was carefully selected so it not only would give a diffusing effect immediately around the operator, but also would move the air along the inside surfaces of the cab to reduce the radiant effect generated by the high temperatures outside.

For winter heating, the air passes over electric strip heaters.

There are many branches of the steel industry that could use the new crane cab cooler, according to Dravo. Besides ladle, convertor, stripper and soaking pit cranes, many cranes in rolling and slab mills, and plants having blast and open hearth furnaces could well condition the air for their operators. Because of the toxic fumes found in many alloy steel plants, such as those producing manganese, chrome, silicon and beryllium alloys, the fume removal feature would be particularly advantageous in those plants. The chemical industry also has need for air conditioned crane cabs in some of their processes.

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RATE OF HEAT TRANSFER

THE rate of heat transfer from air to bare pipes or tubes usually varies from one Btu. to three Btu. per square foot of tube surface per degree temperature difference, between the refrigerant and air per hour depending upon where the bare tube coil is located as to how it affects the rate of air circulation over the coil. If the tubes are located in an open space we may depend upon the heat transfer of two Btu. per square foot per degree temperature difference per hour. To put this in formula form it may be written as follows: Btu. per hr. for a bare tube in open air equal .52 x D x L x T.D. where D is the diameter of the tube in inches; L is the length of the tube in feet; and T.D. is the temperature difference between the evaporating refrigerant and the air.

The heat transfer from bare tubes to water which is not agitated but has normal convection circulation by the tube is approximately five times the heat transfer from the air to the refrigerant so that the heat transfer in this case may be written as follows: Btu. per hr. for a submerged tube equal 2.6 x D x L x T.D. where D equals diameter of the tube in inches; L equals length of the tube in feet; and T.D. equals the temperature difference between the evaporating refrigerant and the water.

SERVICE POINTERS

A department for the exchange of ideas on new devices and methods of improving service work. Five dollars is paid for each pointer published. Write up your idea today and mail it to the Service Pointer Editor.

DDT BOMB AS SERVICE TOOL

TAKE a DDT bomb (1 lb. size), drill hole in bottom and solder or braze in a receiver valve to use as a charging valve. Charge it with not over one pound of F-12 and keep it in the service truck.

When you have a thermostatic expansion valve or cold control to test to see if all the charge is gone, open the small hand spray nozzle and spray the F-12 on the bulb. You can tell in an instant if it is operative or not. This is a very handy test device and easily carried. You can find dozens of uses for this small charge. This tool came in very handy once on an ammonia system. The expansion valve did not have a line valve ahead of it, so one of us kept the valve closed with the F-12 bomb while the other serviceman changed screens in line.—*Submitted by Leon A. Thomas, Guthrie, Okla.*

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CALCULATING GALLONS OF WATER THROUGH A CONDENSER

THE number of gallons of water which will pass through a refrigerating system for condensing purposes may be calculated by multiplying the number of pounds of refrigerant which are to be circulated per hour by the difference in heat content of the refrigerant as it enters the condenser in a super-heated state and the heat content of the liquid leaving the condenser, and then dividing the above quantity by the difference in temperature between the water entering the condenser and the water leaving the condenser, times 8⅓. In other words, we find the amount of heat that is being taken out of the refrigerant per hour and divide that by the difference in temperature in the water, which will give us the number of pounds of water used per hour; and this divided by 8⅓ will give us the number of gallons of water per hour. For a rough estimate, the amount of heat which will pass into the water in the condenser may be approximately 120% of the amount of heat which the refrigerant picks up in the evaporator; so that if you know how much refrigeration you are doing in Btu.'s per hour, you can multiply this by 1.2 and divide this quantity by the temperature difference in the water, times 8⅓.

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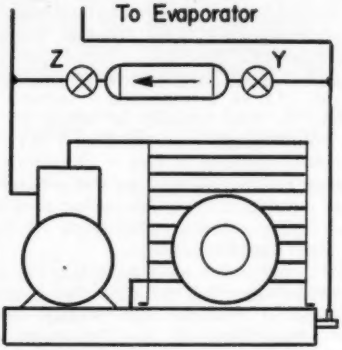
LOCATING DRIERS

THE proper location and installation of driers has always been a controversial point with servicemen and engineers. I have also heard the pro and con on rolling or attrition of drier particles; and the up-side-down, right-side-



up, vertical and horizontal "arguments." All seem to have very logical reasons for their beliefs.

For some time I have been installing driers ahead of the expansion valve in the liquid line in the refrigerated space. The idea here is to increase the adsorption capacity of drier for moisture by maintaining drier temperature as low as possible.

I still like this idea because it has given satisfactory results as far as I can determine. However, I have adopted another idea (not my own) that I would like to pass on. It is as illustrated in the accompanying sketch. With drier installed as shown, open Z and crack valve Y sufficiently to cause frosting of drier—care being taken to prevent floodback to compressor. After operation for 1 to 3 hours (depending on amount of liquid charge), Y and Z are closed. Not only do you remove the maximum amount of moisture possible with a given drier, but the drier itself is never in the system and cannot cause a pressure drop across it. It can also be removed readily.

If the moisture is known to be excessive, the only logical thing to do is remove both refrigerant and oil after repairing leak, replace with clean dry oil and refrigerant—and since I am an adherent to the vacuum pump, I would first pull a 29" vacuum on the system. I have often wondered why servicemen shy away from an argument involving the use of a good vacuum pump in their service work. I would welcome an open forum on this subject.—*Submitted by John W. Fox, Salisbury, N. C.*

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PREST-O-LITE SAVES THE DAY

AT THE height of the busy season a couple of summers ago I had just finished a call at an isolated ranch in Imperial Valley. About half way back to town I ran out of gas.

Away out in the desert—no traffic—ten miles to the nearest gas station and a lot of calls on hand to take care of. I felt pretty low until I thought of the Prest-O-Lite tank. I took the air cleaner off the carburetor, took the burner tip off the Prest-O-Lite hose, stuck the hose into the carburetor intake, then turned the Prest-O-Lite valve on. I then stepped on the starter and the motor started. With the Prest-O-Lite bottle furnishing the fuel, I made it in to the nearest filling station without any further trouble and in good time.—*Submitted by H. L. Myers, National City, Calif.*

"DON'T BE SCARED, MAC . . . WE GOTTA BE PREPARED FOR EMERGENCIES, Y'KNOW!"

QUESTIONS AND ANSWERS

Send Your Servicing and Installation Problems to the Question Box.

DONUT COOLING

QUESTION 825: Recently I was called in to look at a donut cooler in one of the largest bakeries in town to see what could be done to get better results from this machine.

The donuts—hot from the friers at about 300 degrees F. run onto a belt, are carried up on an escalator and are placed on an endless chain with wire cross-links. This chain makes nine passes through a glass enclosed tunnel, the size of which is approximately 30 feet long, 6 feet high and 4 feet wide. Evenly spaced along the bottom of this tunnel are 4 openings, each 4 feet long (width of tunnel) and 1 foot wide, used as air intakes. At the top of the end the donuts enter is a ½ hp. motor and exhaust fan with a 10 inch vent to the atmosphere. Air intake is from the room with no provision made for cooling it as it enters the tunnel. This machine is supposed to cool 1,000 dozen donuts per hour.

The baker's problem is this. At this time of year the donuts leave the cooler at about 100 degrees and when sugar is applied to them it gets sloppy. The machine was installed in January, 1948. With air in the room at about 75 or 80 degrees now—next summer his cooling troubles will be bad when room temperatures may reach nearly 100 degrees.

Is there any practical method of using mechanical cooling—say at one or more of the air intake openings? Please give me your recommendations and also as to size and type of condensing unit and evaporator. One more thing—the donuts leave the machine at the lower right hand end—enter on upper left.

Thank you for any information you may give me and thank you, too, for the wealth of information you publish for your members. I look forward to every publication with great pleasure.

ANSWER: It is a little difficult to make any definite recommendations on the cooling of donuts without a little more knowledge of the present equipment being used and the space available for additional equipment.

It would seem to me that at this time of year a better job of cooling could be done if the air from the cooler were reversed. In other words, if the intake air were taken from outdoors, filtered and passed into the cooler. It could then be either discharged to the outdoors again or discharged into the room, providing the additional heat would not be objectable.

In the summer there would be a different problem, however, inasmuch as the outdoor temperature would be in excess of the final desired donut temperature, and it would seem then that the only alternative is to use refrigeration as a means of cooling. If I were using refrigeration I think that I would prefer adding another cooling tunnel to the present cooling facilities so that as much load as possible would be taken off the refrigerating equipment.

Refrigeration Needed

You state that at present the donuts leave the cooling tunnel at a temperature of about 100 degrees which would mean, that they would enter the refrigrated cooling tunnel at this temperature and would probably have to be cooled down to about 70 degrees for easy sugar coating. I have no information here on the weight of a donut nor the specific heat, but I am assuming that each donut will weigh about one ounce—and using a specific heat of .5 I come out with a Btu. load for 1,000 dozen donuts cooled from 100 degrees to 70 degrees of 11,250 Btu. per hour. This would require a 1 horsepower water cooled unit to handle the load.

A tunnel built for this purpose should be a re-circulated air type rather than discharging cooled air into the room or outdoors. As I stated before, I don't

know whether space limitations or time limitations would permit the use of a second cooling tunnel. My objections to endeavoring to refrigerate the present tunnel is that the load would be too great. Cooling a blast of air which would be discharged to the outside would mean quite a heavy load on the condensing unit, or on the other hand if you endeavor to do the entire cooling of the donuts from 300 to 70 degrees in a re-circulated type of cooling tunnel, the load would be greatly increased over the secondary tunnel arrangement.

I am not so sure that I have been of much help to you in this problem but as I stated before, it would require a much more intimate knowledge of the equipment involved and the conditions to be met before any real recommendations could be made.

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MILK COOLING

QUESTION 826: I have a tubular milk cooler, surface type. This cooler was used for cooling with brine. With the brine at 18 degrees F., it cooled the milk at the rate of 35 gallons in 40 minutes from 70 and 85 degrees F. to 50 degrees F. With a 1½-hp. Frigidaire compressor, changing this job to direct expansion cooling—of course, first washing out and baking our milk cooler—could satisfactory operation be obtained? Or would you advise a larger cooler?

The pipe size of the present cooler is ¾ inch; the gas used is SO_2; the size of the cooler is 8 x 18 inches.

ANSWER: According to my calculations, 35 gallons of milk in 40 minutes—or, in other words, 53 gallons of milk per hour—cooled through a temperature differential of 35 degrees will impose a heat load of 14,676 B.t.u. per hour on the condensing unit.

A 1½-hp. Frigidaire machine operating on a suction temperature of about 15 to 18 degrees would be capable of doing the work of about 12,000 B.t.u. per hour; therefore, with the type system you are planning on installing it is possible the machine will be somewhat overloaded or on the other hand it will probably require more than 40 minutes to run the 35 gallons of milk over the cooler.

The cooler should be able to handle very nearly as much milk per hour utilizing the direct expansion method of cooling as it will when employing brine circulation. The temperature of the refrigerant will have to be maintained at 30 degrees or slightly less.

I am of the opinion in any case that the cooler you have is large enough for the condensing unit you will have connected to it and while the combination may not be large enough to handle 35 gallons of milk in the 40 minutes I take it for granted that the additional time required would not be objectionable.

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MILLIONS MAY BE SAVED BY U. S. REFRIGERATION

A MAJOR role in saving millions of human beings from starvation was predicted recently for this country's refrigeration industry.

That opinion was heard by delegates to the first annual convention of the Virginia State Association of the Refrigeration Service Engineers Society in Richmond, Va.

"We save food because we in the industry prevent spoilage of food," said the speaker, Rollin N. Israel, Advertising Manager of the Virginia Smelting Company, West Norfolk, Va.

"There is a shortage of food in the world, even right here in America where we all said it couldn't happen. 'Oh, well,' somebody says. 'So what, it's only temporary; we're sending too much food across the seas.' Want to bet? Just ponder these figures for a minute:

"The world population is two and a quarter billions. The tillable land area is four billion acres. Economists claim that it requires two and a half acres of land per person for an adequate supply of food and clothing.

"Right now there are only 1.77 acres of arable land per person. It is estimated that from one to one and a quarter billion acres can be added to the total tillable acreage, but it's doubtful whether it can be put under production at a rate that will keep pace with the population increase — 20,000,000 per year.

"Moreover, our lands now under cultivation are steadily losing their productivity. They are sterilized by wind

and water erosion. Every 24 hours unchecked erosion carries away the equivalent of 200 of our best 40-acre farms.

"If food supplies cannot be produced in greater quantity, waste must be eliminated. The art of conserving, preserving and transporting food stuffs must move closer to perfection.

"Here in this world food emergency is shaped the magnitude of our responsibilities and of our opportunities. Refrigeration may play a big part in saving millions of lives."

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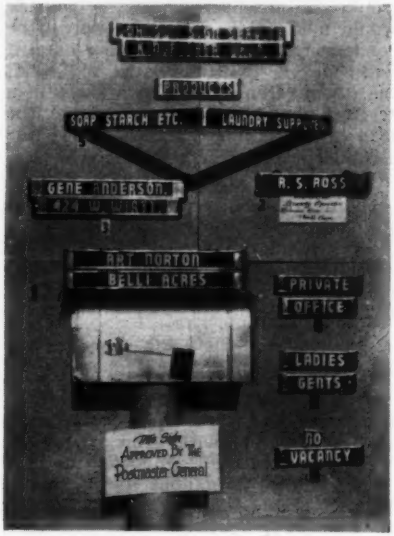
SIGNS FOR RURAL IDENTIFICATION PAYS THIS SERVICEMAN

JOHNSON ELECTRIC REPAIR CO., Kingfisher, Oklahoma, has gone into the sign business and is now known as Johnson Sign Service. Lee M. Johnson, owner of the business and a former refrigeration serviceman of 20 years' standing, is doing right well by himself in this new field. Telling us about it, he writes:

"I'm not in the refrigeration service business now but sure like your magazine and want to keep up on what is new and someday I might want to (or have to) get back in the business again.

"I'm going to take this opportunity to tell you about my new business. I've always dabbled around at the sign business since I was about twelve years old, but I never did go all out for it as I was sort of spasmodic about getting in the mood and if I wasn't in the mood, crow tracks would resemble my work. A sign might lay around until the customer got tired of waiting and hire someone else before I got to do the job.

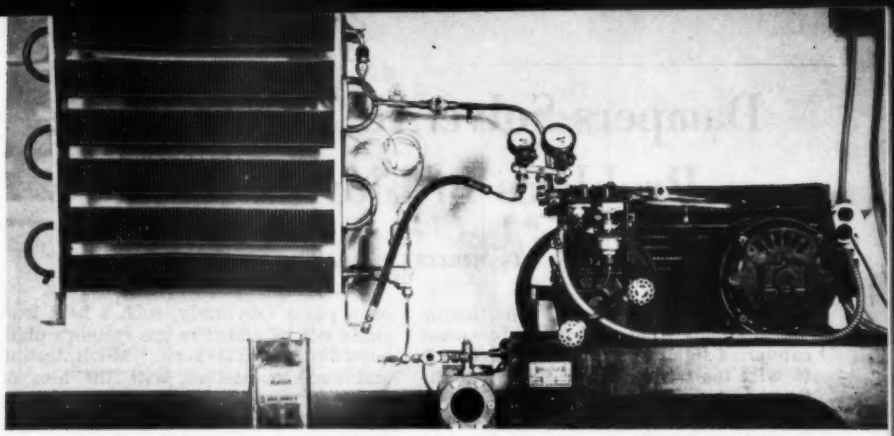
"Well, one day before the war I started out in the country to do a service job and I drove about six miles past the place where I was going and had to turn around and come back. Had this customer had his name on his mailbox, this wouldn't have happened. I took out one day then, when I had some time on my hands, and lettered up a bunch of mailboxes just for fun. (This was back in the $1.00 per hour era—remember?) I found this was too slow so started figuring on something different. Well, I fooled around in my spare time trying to work out something to go on the side of the boxes but never got anything that suited me. Then along came the war and I moved to Wichita to make a fortune in a war plant. Well I never got into a war plant or made the fortune, either. I



took a job with S. H. Kress as store maintenance man and engineer—then after the war I came back to Kingfisher and started in the repair business again.

"About six months ago I made and sold my first 'Nite and Day' reflector name plate for mail boxes. Since then I've received orders from every state in the union. I have over a hundred salesmen and am receiving compliments and praise from such people as Gov. Roy J. Turner (Okla. Gov.); Jef. M. Donaldson, Asst. Postmaster General; Chas. Ward, President of Brown & Bigelow; Ed Lemons, WKY Farm Reporter; Clyde W. Zimmerman, Associate Editor of Cappers Farmer; and I even received a nice letter from our local Sheriff. Boy! I thought I was getting called on the carpet when I got this.

"Well, anyway, I'd appreciate it if you would mention something about this in your magazine and let the servicemen see that they won't have to keep playing hide and seek with their rural trade if my signs keep selling like they have been.—*Yours for better Rural Identification, L.M.J.*"



The equipment used in making the tests reported here included a Brunner condensing unit, a special glass and receiver and a 50 ft. Peerless fin coil.

Tests of Color Tracers in Refrigerating Systems

THERE has been considerable discussion in refrigeration service engineering circles concerning the action, method of use and efficacy of color leak detectors in refrigerating systems. Highside Chemicals Company, one of the manufacturers of this type of compound, has released an engineering department summary report which shows some actual tests and the results obtained thereon. Much of the work was carried on by R.S.E.S. member, Carl Winnefeld of Morris Plains, New Jersey as a consulting project for Highside Chemicals Company.

A series of laboratory tests were carried out in the following equipment: ½ h.p. Brunner aircooled compressor connected to a Peerless fin cooling coil of approximately 50 ft. of surface. Thermostatic expansion valve, normal super heat setting of about 10 F. Special sight glasses in the line in the following locations: liquid line, suction line, compressor discharge line, and the line from condenser to receiver. The crankcase fitted with a boiler-type gauge glass so that the oil level could be observed as well as the color of the oil in the crankcase. A special receiver with glass ends so that the level could be observed, as well as the action of the refrigerant and the color in the receiver. The machine controlled by a pressurestat.

Color materials for leak detection, a much discussed subject lately, require a thorough knowledge of their limitations and proper use if success is to be obtained. This is true of any product or material used in refrigeration work. These tests, made largely by an independent service engineer and described in this report, tend to prove the value of color leak detectors when used as recommended.

Tests were made by adjusting cycles for various refrigerants, temperatures, and pressures, and by creating artificial leaks. In each case the system was allowed to run and the results observed.

Tests were run to determine the rate of circulation of color in the system and

(Continued on page 74)

Dampers Solve Air Conditioning Problems in Florida Hotel

By HERBERT HANLEY

A HIGHLY unusual air conditioning problem—that of cooling two staff cafeterias totaling more than 45,000 cu. ft. with the same air conditioning facilities which cool public rooms—has been licked at the famous Hollywood Beach Hotel by a novel system of dampers.

The Hollywood Beach Hotel, 17 miles north of Miami, is the largest resort hotel on the east coast of Florida, accommodating something like 850 guests. A major reason for the fine reputation for service and enjoyment which the resort hotel enjoys is the fact that there is approximately one employee for each guest—altogether more than 1500 people in the building, making it a "small city under one roof."

Air conditioning has been supplied throughout the hotel, including a school for guests' children, some 30 retail shops and stores, a counseling office, all guest rooms, as well as the famous Flamingo Room and adjoining bar and theatre.

One of the most unusual features of the Florida showplace is the fact that all employees and executives of the hotel dine and work in air conditioned comfort just as do the guests. This pleasant situation stems from the belief of Richard S. Wright, manager of the hotel, that to provide maximum efficiency throughout the hotel, employees must enjoy the best possible working conditions and morale. Therefore, when the hotel management recently installed a new air conditioning system for the Flamingo Room, bar and theatre, the Hill-York Company, Miami air conditioning specialists, were requested to devise a system that would handle the two staff cafeterias as well.

This proved to be a difficult proposition, inasmuch as the employees' cafeteria is a sizable room of some 28,000 cu. ft., and the executives' cafeteria only slightly smaller. To condition both of these rooms, a duct-run of about 160 feet in length was found to be required, one section of 45 feet having to cross an open patio. Obviously, such a heat load could not be added to the system's plan, according to Hill-York. Much testing and experimentation, with the idea of eliminating the expense of installing additional separate air conditioning equipment was carried out before the contractor hit upon a plan of operation whereby the hotel's air conditioning problem was solved with no additional horsepower required.

The ultimate solution was a system of dampers, by which the full cooling power of the hotel's air conditioning plant could be used in the employees' cafeteria when desired, and switched to other zones for guest use at other periods. By staggering meal service periods, it is possible to utilize the staff cafeterias before the Flamingo Room, the bar or the theatre were occupied. Therefore, a system of dampers controlling both the conditioned air and the returned air was designed. Operated manually, these dampers switch the entire output of the 50-ton air conditioning unit into the staff cafeteria during employees' dining hours, shutting off the public guest rooms completely, and in turn, direct the entire cooling capacity into the Flamingo Room and adjoining theatre when desired. A system of simple controls has been devised whereby the hotel engineer may quickly cool any section of the public rooms, staff cafeterias, bar, etc., as desired. The result has been cool, comfortable living for hotel employees which has a high influence on the satisfaction of guests.

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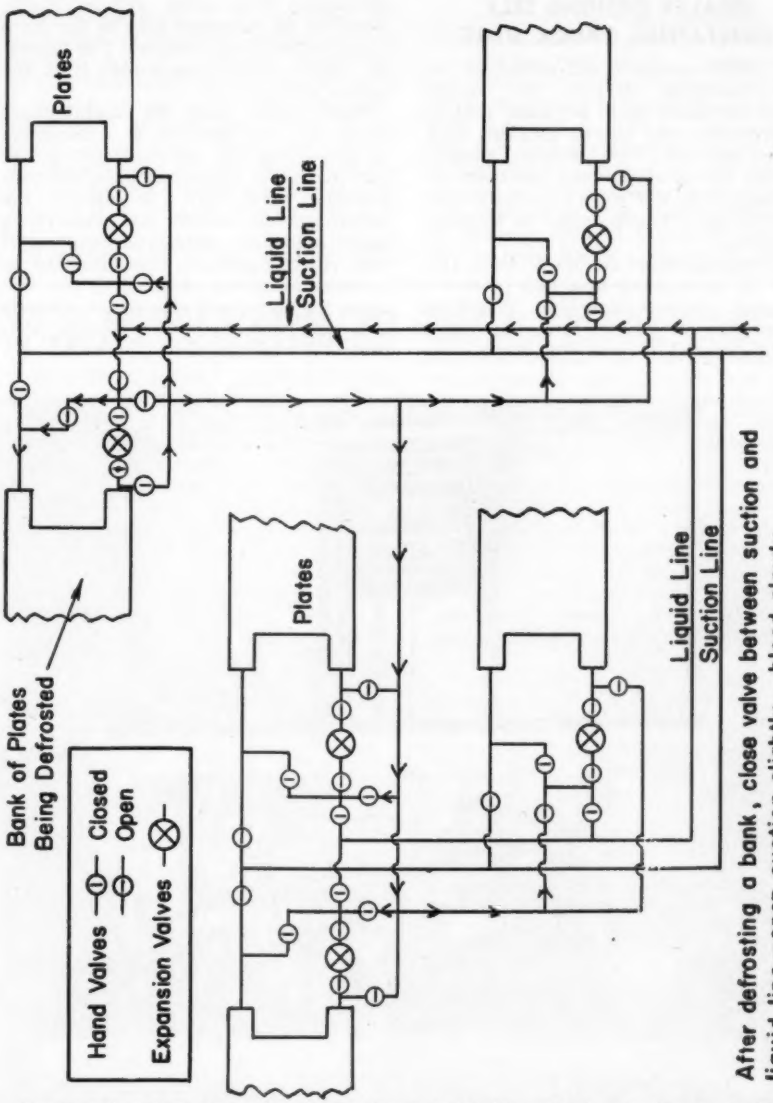
SERVICEMEN in San Francisco have been advised to cooperate with the local citizens' power conservation committees. At the present time all applications for installations must be approved by the local committee. The fullest cooperation is again suggested with the committees so that customers' essential needs will be taken care of.



Confronted with the necessity of providing hot gas defrosting in a locker plant without interruption of service, Mr. Morris Wise of South Bend, Ind., came up with this method which he states is working very well.

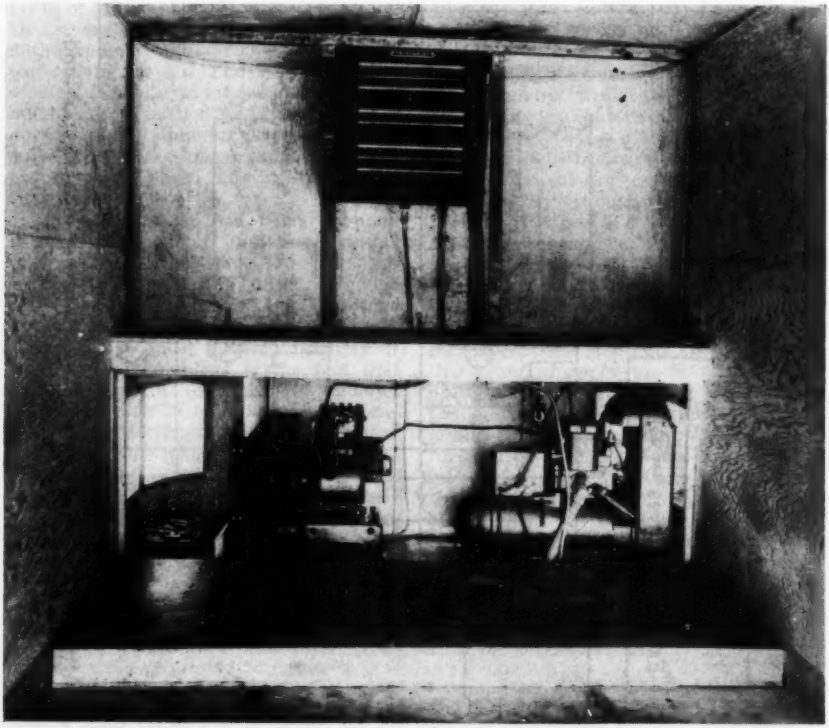
The plant had been in operation for two years and in that time had accumulated a heavy coating of ice, even though the plates were scraped weekly. There was no method of defrosting provided without interruption of refrigeration. With three thick walls to go through between the compressor and locker room, Mr. Wise thought there must be an easier way out and proved there was when he devised the method illustrated here. A third line is run to each bank of plates which becomes a temporary liquid line while defrosting is going on.

DEALER DESIGNS SELF CONTAINED TRUCK UNIT

A NEW, compact self-contained refrigerating system for trucks, which increases cargo payloads, reduces maintenance and affords constant cooling on the road plus a "plug-in" standby service during stop-overs, has been developed by K. E. May, a Frigidaire commercial refrigeration dealer in Moberly, Missouri.

A small gasoline engine drives a 115-volt AC generating unit and powers a compact reciprocating-type Frigidaire compressor, which, in turn, operates a forced-air coil to cool the cargo compartment. The entire system is enclosed in an insulated case in the front section of the truck trailer. The forced-air cooling unit is suspended from the ceiling above.

Users claim that the maintenance work has been reduced to a minimum by employing the self-contained power unit instead of depending upon the conventional drive-shaft. In addition the system saves weight by eliminating bulky hold-over plate-type evaporators with eutectic solution, thus affording an increase in actual cargo payloads. Because the forced air evaporator operates at a high back pressure, a smaller compressor is possible.



This self-contained refrigerating system for trucks was developed by K. E. May in Moberly, Mo., the installation is powered by a small gasoline engine which drives a 115-volt AC generator (right). A compact Frigidaire refrigerating mechanism (left) is operated by the generator. An ingenious arrangement permits water, accumulated by defrosting, to drain into the radiator of the gasoline engine. The entire system can be started or stopped by a push-button control in the driver's cab. When in operation, the insulated door (front, foreground) swings upward and is secured at the top of the case.

While the truck is on the road, refrigeration is supplied continuously as required by the gasoline generating unit, which operates the cooling unit with a governor when the compressor shuts off. Another feature is an ingenius arrangement which permits water, accumulated by defrosting, to drain into the radiator of the gasoline engine, keeping it filled and disposing of any excess.

During stop-overs, the truck operator can shut down the engine generator and operate the system by plugging in to any 115-volt electrical outlet. Two air vents are installed in either end of the insulated compartment. The installation has been designed so that the truck operator can start the gasoline engine from a push-button control in the driving compartment. May has installed these new systems on four trucks—three for the Mallory Transit Company and one for the Rolla Truck Lines, of Moberly.

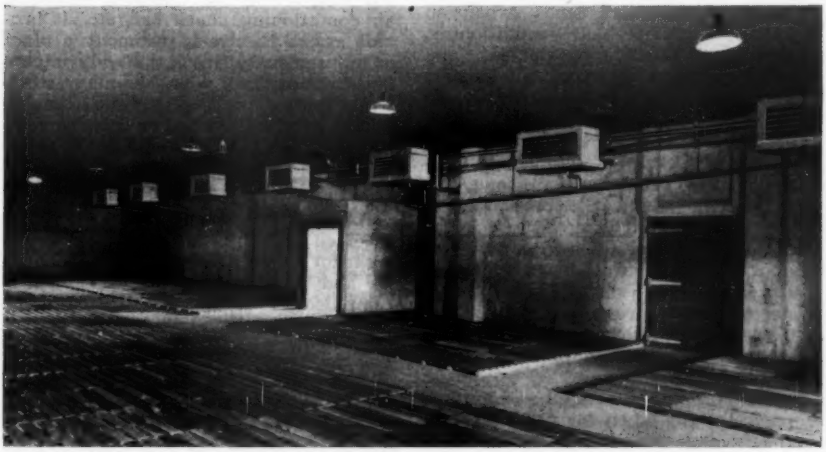
WATER DEFROST EVAPORATORS IN FROZEN FOOD WAREHOUSE

FROZEN FOODS DISTRIBUTORS, Inc., in Oakland, California last year made a good sized installation of "Recold" Water Defrost coils in two of their large cold storage rooms. Since the installation was made early last spring, the firm which is under the capable management of Alvin Langfield has kept carefully charted temperature records of the operation and these records tell an interesting story of the performance of the water defrost coils.

The plant includes two rooms, the first is 40'x12'x10' and is equipped with six AS-2700-LT "Recold" Water Defrost Coils. The second room measures 47'x114'x12' and is equipped with seven of the same type of coils. The load was handled by one 6x6 ammonia compressor through all of the past summer weather and being fully automatic, the cycling operation surprised everyone having a knowledge of refrigeration loads.

This plant is capable of handling 30 railroad carloads of frozen foods with an approximate daily turnover of two cars per day. Considering the turnover and the amount of foods which are stored in this warehouse, it is hard to realize that there is such a small fluctuation of temperature as the recordings show.

These readings taken twice a day show that even during the warm sum-



Before the largest of two storage rooms of the warehouse of frozen Food Distributors, Inc., was loaded with merchandise this interior view was taken of the seven "Recold" Water Defrost coils which were manufactured by Refrigeration Engineering, Inc., in Los Angeles, California.

mer months of August and September, there was a very small fluctuation of temperature at all times.

The job was installed by James R. Payne, well known refrigeration contractor at Santa Rosa, California. Mr. Payne was formerly chief engineer of the Haslett Warehouse in Oakland which is also a "Recold" installation.

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NEW EXCISE TAX ON SHIPMENTS TO CANADA

BULLETIN 32 published by the Interprovincial Association RSES, February 3rd, clarifies the new 25% excise tax applied to certain applications of refrigerating equipment shipped into Canada. Addressed to all members of the Association, it reads:

"The following is an excerpt from a letter dated Dec. 8th, 1947 from the Deputy Minister of National Revenue for Customs and Excise to all Collectors of Customs and Excise for Canada and covers the equipment which is subject to 25% Excise Tax when used for certain applications, and is reprinted here by permission of the Canadian Refrigeration Manufacturers' Association.

'Electric or gas refrigerators, or freezing equipment, and coils, condensing or compressor units, cabinets, boxes, evaporators and expansion valves therefore: air conditioning, cooling or filtering equipment, and complete parts therefore: oil burners and oil burning equipment: all the foregoing when adapted to household or apartment or recreation, including rinks, halls, clubs or auditoria. Note:—you will note that the items taxed are only those adapted to household or apartment use, or when for use in the places mentioned. The tax will not apply to industrial installations or stores, butcher shops, dairies, food processing or preserving plants, etc. You will note, however, that air conditioning, air cooling or air filtering equipment has been added to the list of taxable goods, as well as complete parts thereof when for uses stated in the item.'

A clarification of the above is as follows:

The end use of such equipment in locations primarily used or intended for amusement, recreation or entertainment is subject to Excise Tax and where you have a problem determining this, it is necessary for you to think the matter out to the end use and to determine whether or not the place falls in one of those categories. The following are examples: All clubs, such as golf, badminton, curling, skating rinks, dance halls, and auditoria generally used by the public or for private clubs are an exciseable end use. In the case of equipment destined for a tavern which is part of a hotel, you will realize that a hotel is a public service institution and the tavern is an adjunct to it. Therefore, equipment for the tavern is non-taxable, nor is an ordinary tavern which does not have a floor show or other major form of entertainment, exciseable. A night club is a place which is primarily one of entertainment, though they may serve food and liquor, but if the prime intention is to perform as a night club or one which is not open during the daytime for service to the public, then it is a taxable source.

Conversely, a night club which is installed as part of a hotel is not taxable, since the hotel is the prime object and the night club is not an exciseable end use. All equipment installed in a domestic or apartment house is taxable. All equipment for theaters, including air conditioning, snack bar, etc., is taxable as the theatre is primarily a place of amusement. This is a highly important matter and your complete study and cooperation is essential to enable you to determine whether or not excise tax is applicable to the end use.

Dealers Responsible

As you know, the manufacturers have received approval to use a certification form for use of all dealers in the industry and because of this concession, it is compulsory that we do a reasonable amount of checking and policing to prevent equipment being supplied to an end use without paying the excise tax where it should be applied.

P.S. Since the writing of the above and before going to press, the following item was carried in the Toronto Globe and Mail, on June 22, 1948:

"Ottawa, Jan. 22—Air conditioning, cooling and filtering equipment has been

added to the list of goods from which the Dominion's new 25% austerity tax has been removed, it was learned today. Earlier this week it was disclosed that the tax had been removed from oil burners and oil burning equipment, a wide range of sporting goods, shaving brushes, and also combs and mirrors costing less than 25c.

"A Revenue Department official said that in all cases withdrawal of the tax would be retroactive to Nov. 18. If a consumer bought one of the listed articles and paid the tax he now can apply to his dealer for a rebate. The dealer can in turn apply to the manufacturer.

"The tax was aimed at cutting down sales of imported goods, but officials said that in these lines it was threatening to backfire upon similar items manufactured in Canada and sold in the United States. Under United States Customs regulations, officials of that country have indicated the valuation of these Canadian-made goods for duty purposes would be boosted in line with the new tax. This is under a clause stating duty valuations may be the same as those in the country of origin.

"Under this interpretation, said a Finance Department official, Canada stood to lose more than she would gain on some articles."

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RAC GUILD PROPOSES COUNTY CHAPTERS

AT THE last meeting of the Board of Directors of the Refrigeration & Air Conditioning Guild of New York City, Theodore A. Reina, President of M & R Refrigeration Corp., proposed that the Guild operate under a county chapter for purely local county problems. He stated that the time has come for trade organizations in general, and the Refrigeration Contractor Associations in particular, to become realistic about everyday problems, "to worry about the trees, rather than the forest". This can be done by the creation of county chapters. He added that it should not be forgotten that the Refrigeration Guild must handle broad policy and that the local groups should handle specific local problems. He continued that it was important to get better acquainted with one's competitors in the same area. Local chapters should meet at each other's place of business at least once a month and hold informal meetings discussing 'down to earth bread and butter questions' which affect their immediate business welfare. By no means, he stated, is he minimizing the value of the National Association of Refrigeration Contractors in creating and establishing national policy and the Refrigeration Guild for creating and establishing broad overall policy for the refrigeration contractor industry in New York City.

The plan envisions having a separate chairman and secretary for each county. Each county will elect two delegates and these delegates, together with the regular officers of the Guild, will form the new Board of Directors of the Guild.

The reason for this proposal is that it has been discovered that problems in one county, although of general interest to all members of the Guild, may not be of particular interest and importance to contractors in another county. Also, it was found that Guild activity covers such a wide field of activity and there are so many different problems that all the activity scheduled for a particular Guild meeting cannot be completed.

It therefore seems advisable that in a City the size of New York, having a population and a market area greater than most states, that the problem should be handled a little differently.

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FATAL ACCIDENT

A REFRIGERATION mechanic was instantly killed in March on a small dairy farm near San Mateo, Calif., by a small Freon compressor. Investigation with the man's employer and examination of the compressor head which blew off revealed that the mechanic was adding oil to the crankcase with compressor running. Apparently he failed to check the amount of oil the machine could take, overloading the case. It is assumed that the cylinders flooded, building up compression to the point where something had to relieve the stress. The twin cylinder head blew off the compressor, striking the mechanic in the head, killing him instantly. His employer reported that both the intake and discharge valves were found closed immediately after the accident.

NEWS AND ACTIVITIES

COMING CONVENTIONS

New England States Association Conference and Exhibits

Place: Hotel Bradford
City: Boston, Mass.
Date: October 8, 9 and 10, 1948
General Chairman: John J. Madden, 212 Madison Street, Dedham, Mass.

11th Annual RSES Convention and R.E.M.A. Exhibition

Place: Sherman Hotel
City: Chicago, Illinois
Date: November 19-22, 1948
Secretary: H. T. McDermott, 433 North Waller Ave., Chicago, Ill.

3RD ANNUAL WISCONSIN STATE MEETING

THE Wisconsin State Association held its third annual convention in Fond du Lac, Wisconsin, at the Retlaw Hotel, March 20 and 21. The meeting was favored with warm sunshiny weather which contributed much to the enjoyment of the affair.

Registration began at 9:00 a.m., March 20, and at 10:30 a.m. visitors were taken on a tour of the Sanitary Refrigerator Company plant in Fond du Lac.

The first business session began at 1:30 p.m. with committee appointments by the President. This was followed by an educational session, and the first speaker of the afternoon was Herman Goldberg, of the Herman Goldberg Co., Chicago, on the subject "The Value of Service." The next speaker on the subject "Selling Is Important, too," was Fred Bommer, Vice-President of the Sanitary Refrigerator Co. of Fond du Lac. Mr. Bommer gave an exceptionally interesting talk on the importance of selling in any line of work that you may be engaged in. He tied up this thought with some of the important characteristics which go to make up a good salesman.

A business session occupied the balance of the afternoon and during the evening the annual banquet and entertainment provided both good food and amusing entertainment. Mayor Weis of Fond du Lac gave the address of welcome after the dinner, and Leo J. Promen was the guest speaker. Dancing to the music of Arch Adrian filled the balance of the evening.

The Sunday morning session was opened with an Information Please period led by Paul Reed and a staff of experts. Several manufacturers had booths outside the meeting hall with a display of products, and following the Information Please session, each of these manufacturers gave a brief talk on their products. The manufacturers represented were Kold Hold Mfg. Co., Lansing, Mich.; Paragon Electric Co., Two Rivers, Wis.; Schnacke, Inc., Evansville, Ind.; U. S. Airco, Minneapolis, Minn., and Wabash Mfg. Co., Chicago, Ill.

The annual election of officers and new business completed the two-day meeting.

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VIRGINIA STATE ASSOCIATION FIRST ANNUAL MEETING

THE first state meeting of the Virginia State Association was held in Richmond, February 14. President W. E. Booth called the meeting to order and welcomed members and guests. He then introduced J. G. Hudgins, Chairman of the Constitution and By-Laws Committee, who read the proposed Constitution and By-Laws to the members. After some discussion the Constitution as written was accepted.

The next speaker was Ralph Lampie who reported on the formation of regional districts. Charles C. E. Harris, International Vice-President, was one of those present and he added much educational information to the activities of the regions.

In the upper view of these two pictures, Charles C. E. Harris is shown presenting the Virginia State Association charter to W. E. Booth and to Mrs. B. A. Hauck, President of the Virginia Chapter Ladies Auxiliary. Left to right in the picture are: Gene Zepkin, Vice-President; Merrill E. Parker, Secretary and Treasurer; H. S. Beumer, Sergeant-at-Arms; Mrs. B. A. Hauck, Pres. of Virginia Chapter Ladies Auxiliary; R. W. Lampie, Vice-President; Chas. C. E. Harris, International 1st Vice-President; J. G. Hudgins, Director; W. E. Booth, State President; B. A. Hauck, Vice-President; and Paul B. Reed, International Chairman, Educational and Examining Board.

In the lower picture is a general view of those in attendance at the banquet.

The first speaker on the educational program was Mr. Williams of Airserco Mfg. Co., Inc., who talked about the products manufactured by his company.

R. H. Israel of the Virginia Smelting Co., Norfolk, Va., was next on the program with an interesting discussion on the subject of "Customer-Dealer Goodwill Philosophy."

Next was Paul Reed, Chairman of the International Educational Board, who spoke on the subject "Oil and Refrigerant Mixtures." His talk was illustrated with projected slides. In his talk, Mr. Reed covered the miscible and non-miscible oils, properties of oils, function of oil traps and oil separators, and the behavior of refrigerant and oil mixtures.

Social activities included an early evening cocktail hour which had the effect of loosening up tongues and creating good fellowship.

Later in the evening the annual banquet was held with Eugene Zepkin, State Educational Director, acting as master of ceremonies. After introducing the officers of the State Association and various distinguished guests, Mr. Zepkin called on Mr. Harris to present the charter to both the State Association and the Ladies Auxiliary. Jack Kaminsky and his orchestra supplied the music for the dancing which wound up the balance of the evening.

RSES Interprovincial Association 9th Annual Conference a Big Success

TWO days filled with educational information, social activity and a general all-around good time was offered the visitors to the 9th annual educational conference of the Interprovincial Association, held in the King Edward Hotel, Toronto, Ont., March 30 and 31. Some 350 visitors took full advantage of all the features of the gathering and enjoyed themselves to the limit of their capabilities.

Registrations began on the evening of March 29 and prior to the opening of the registration booth an executive meeting occupied the afternoon of March 29, during which much of the business of the Association was disposed of, leaving more time available for the lengthy educational programs of the next two days.

At 10:00 a.m., March 30, the convention was called to order by A. J. Pike, President of the Interprovincial Association, and Mr. Pike delivered the address of welcome to the delegates. International officers present who were introduced by Mr. Pike included Wm. Marshall, International President; Charles C. E. Harris, International 1st Vice-President; and Nap Brossoit, member of the International Board of Directors. Wm. Marshall responded to these introductions with a brief talk, then the balance of the morning was taken up with the reports of the Secretary and Treasurer, and the appointment of a Nominating Committee.

A luncheon was served at 12:30 p.m. at which Harold G. Stern, President of the Refrigeration Equipment Wholesalers Association, was the guest speaker. Mr. Stern stressed the necessity of close cooperation between refrigeration service engineers and the wholesalers' Association, and offered any help it was possible for his Association to give in the furtherance of the improvement of the refrigeration service field.

The educational program of the afternoon began at 2:00 p.m., with Dr. W. O. Walker of the Ansul Chemical Company, the first speaker on the subject "Solids in the Refrigeration System." Dr. Walker illustrated his talk with projected slides and provided a display board of test tubes containing the various sludges, carbons and other foreign matters found in refrigerating systems due to moisture and the break-down of oils. It was a highly informative talk, portraying a graphic picture of what happens to the refrigerating system when moisture is present.

1948 I.P.A. OFFICERS

E. G. McCracken, President
G. A. Olmstead, 1st Vice-President
J. M. Turner, 2nd Vice-President
R. G. Henderson, Secretary
T. A. Tran, Treasurer
A. LaFlamme, Sergeant-at-Arms
H. Donnell, Chairman, Educational Comm.

BOARD OF DIRECTORS

John Roberts and Murray Dickie—Nova Scotia
T. E. Andow and P. E. Palmer—New Brunswick
A. Gendron, R. Brault—Mount Royal
W. Lowry, W. Podd—Canadian Capital
C. W. Moore, C. G. Heilig—Ontario Maple Leaf
D. J. Hamilton, H. J. Brough—Border Cities
Frank Chance, F. G. Dowle—Winnipeg
W. H. Dowling, J. E. McKenzie—Calgary
A. M. Campbell, A. G. Smail—Lions Gate

Ken Newcum, President of Remco, Inc., Zelienople, Pa., spoke next on "Proper Application of Dryers" and his recommendations along this line created so much interest that much of the question periods which followed were devoted to this subject.

The first afternoon session wound up with a question and answer period conducted by H. S. Parish, edtior of the Refrigeration Journal.

The evening of March 30 was devoted to Monte Carlo night, which proved to be fun for everyone in attendance. Upon entering the ballroom each visitor was provided with $25,000 in printed money which was used for the purpose of playing the various games provided for the occasion. Additional money up to $25,000 could be purchased from cashiers at

The above picture is a general view of the 9th annual Interprovincial Association banquet held March 31 at the King Edward Hotel, Toronto. More than 300 members and their families sat down to a very enjoyable dinner, after which dancing and entertainment completed the evening.

the rate of 1c per $1,000 and the maximum wager on any one play was limited to $5,000. Playing continued unabated for about three hours during which large sums of money changed hands, but with nobody going actually broke. At the end of the session, prizes were auctioned off to the highest bidders. A buffet lunch was served and refreshments could be purchased at the rate of $1,000 a round.

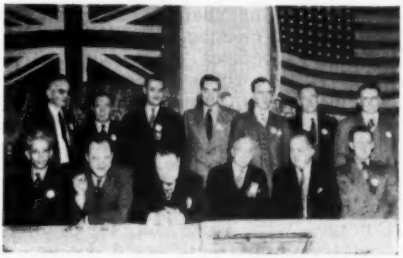
On Wednesday, March 31, the educational session started off with two movies "Magic Versus Science" and "Magic of Fluorescence", supplied by J. Grant of the Canadian General Electric Co.

The first speaker of the morning was Dr. Edgar S. Ross of Sun Oil Co., on the subject "Refrigeration Oils." Dr. Ross' talk was very interesting and provided helpful information on the types of oils used in refrigeration work. The annual election of officers wound up the morning session.

Continuing with the educational program during the afternoon session, Dr. E. A. Sellers of the University of Toronto was the first speaker on the subject of "Uses of Refrigeration in Medicine and Surgery." This talk provided the service engineers present with useful thoughts on the ever expanding applications of refrigeration in the medical field.

Ed Kellie of American Injector Co., spoke next on the "Control of Refrigerant to Obtain Temperature" in which he traced the development of the present expansion valve and other refrigerant controls.

A highly interesting subject was the "Behavior of Material Near Absolute Zero" discussed by Dr. A. D. Misener of the University of Toronto. Dr. Misener has been experimenting with temperatures within a few tenths of one degree of absolute zero, during which some startling results were obtained and some rather unbelievable observations made.



New officers of the Interprovincial Association who are, left to right in the front row: J. M. Turner, 2nd Vice-President; G. A. Olmstead, 1st Vice-President; E. G. McCracken, President; R. G. Henderson, Secretary; T. A. Tran, Treasurer; and H. LaFlamme, Sergeant-at-Arms.

Standing, left to right: H. Donnell, Educational Chairman; C. W. Moore, Director; Al Pike, Retiring President; John Roberts, Director, T. E. Andow, Director, W. Podd, Director; and Dewey J. Hamilton, Director.

While the information he provided was perhaps not of practical value to his audience, it was a highly interesting talk and enjoyed by the entire audience. A second Information Please session conducted by H. S. Parish wound up the Wednesday afternoon meeting.

Wednesday evening at 7:00 p.m. the annual banquet and dance completed the two-day schedule. The dinner was a very enjoyable one, followed by entertainment and the evening was completed with dancing.

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IOWA STATE GROUP HOLD 2ND ANNUAL CONVENTION

IN A TWO-DAY business and educational meeting held in the President Hotel, Waterloo, Iowa, March 6 and 7, the Iowa State Association elected new officers, adopted a constitution and by-laws, and had several interesting educational talks.

New officers elected were C. Ray Jones, Cedar Rapids, *President;* W. B. Hogan, Burlington, *1st Vice-President;* Stanton R. Jones, Dubuque, *2nd Vice-President;* Richard M. Herbert, Waterloo, *Secretary-Treasurer;* and Leonard Hanson, Davenport, *Sergeant-at-Arms.* Directors were not elected at this time, since under the arrangement of the State Association, directors are appointed one from each chapter at the first meeting of the chapter following the annual state meeting.

Some 65 persons were registered at the meeting, which in some respects was disappointing but the poor attendance was entirely due to a bad snowstorm the first day of the meeting.

The first speaker on the educational program was Frank Frazee, Sales Engineer, Westerlin and Campbell Co., Chicago, who spoke on the subject "Service Profits." Howard Holbrook, Minneapolis-Honeywell Co., was next on the program speaking on the subject of "Automatic Control for Central Fan Air Conditioning Systems." This was an impromptu talk that Mr. Holbrook was called upon to give at the last minute because of the failure of another speaker to appear. He did a remarkable job, providing very interesting information to the group. Frank Carter, Detroit Lubricator Co., was next on the program, speaking on the design and operating characteristics of expansion valves. His talk was illustrated with projected slides.

Some 70 people sat down at the annual banquet during the evening of March 6, following which installation of new officers was made by Irving Meyer, immediate past president of the State Association. Dancing occupied the balance of the evening.

The Sunday morning business session wound up the two-day meeting.

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NEW CHAPTERS IN ILLINOIS

ED RICCIO, who has been assigned to the task of forming new chapters by the Illinois State Association, has been extremely active in the past few months, and the result of his activity is the formation of several new chapters in the State of Illinois. Chapters in whose formation he has been active and which have been reported in previous issues are the Kankakee Valley Chapter and the Chicago West Towns Chapter.

In later months, the Illini Chapter in Champaign, was formed by Mr. Riccio with the assistance of D. L. Dunlap, John W. Tinkey and Richard A. Johnson.

In Quincy, Illinois, Ed Riccio, A. L. Fait and Lawrence C. Mathies of United States Electric Co., cooperated in the formation of a chapter. Officers of this chapter are Lawrence J. Zimmerman, President; Joseph J. Heeger, 1st Vice-President; and Richard T. McCollum, Secretary-Treasurer. The third Monday of each month has been selected as the meeting date of the chapter. The United States Electric Co. provided the meeting room and refreshments for the formation meeting.

The Great Lakes Chapter in Waukegan, Illinois, is the latest of the additions to the Illinois State group formed by Ed Riccio, Joseph Dedich and Ward T. Minors. Willis Stafford was present at this meeting and explained the purposes and objects of the Society, providing much of the information on how to operate a chapter. Airo Supply Co., Chicago, Ill., supplied the meeting room and refreshments, and the election of officers resulted in the following: Floyd Tompkins, President; Bernard A. Hermanson, 1st Vice-President; and G. E. Berg, Secretary and Treasurer.

NEW ENGLAND STATES ASSN. PUBLISHES PAPER

THE New England States Association has begun publication of a quarterly paper to be known as "Hearsay" which will be distributed to members within the jurisdiction of the Association.

Providing news of the chapters and individual members' activities, the paper will promote closer association between groups and as it grows, its usefulness to members will become increasingly apparent. A. W. Andreen, President, and his fellow officers are to be congratulated for their adoption of this means of keeping in touch with their members.

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MR. AND MRS. JOHN W. GREGORY

JOHN W. GREGORY, a charter member of the Arrowhead Chapter of RSES, received injuries in an automobile accident in January of 1948 from which he died a few days later. Mrs. Gregory was instantly killed in the same accident. They are survived by two daughters, Ann Janell and Patti.

Mr. Gregory's career in the refrigeration industry was a long and successful one. His career began in the employment of Sears Roebuck Co., for whom he worked for thirteen years establishing a brilliant and outstanding record in the refrigeration field. In 1942 he took employment with Al Guse, Refrigeration Sales and Maintenance, San Bernardino, Calif. During 1943 he established Gregory's Refrigeration Sales and Service of Colton, Calif. Since 1943 this firm has grown to a prosperous, successful business establishment.

Gregory's Refrigeration Sales and Service is now being operated by Kendall Kline of Colton, Calif., while the estate is in the hands of the administrators.

Mr. and Mrs. Gregory's deaths are mourned by the members of the Arrowhead Chapter and all surrounding communities.

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JOSEPH A. HELTZINGER

MEMBERS of the Reading Chapter are mourning the loss of their Secretary, Joseph A. Heltzinger, who passed away on February 19, 1948.

WALTER E. WRIGHT

WALTER E. WRIGHT, well known refrigeration contractor of Cleveland, Ohio and active locally and nationally in associations in the industry, died in Cleveland, Ohio, March 2, and was buried in Lakeview Cemetery, Cleveland, on March 5, 1948.

W. E. Wright

Mr. Wright was a native of Picton, Ontario, Canada, and had resided in Cleveland for the past thirty-five years. He had been engaged in the refrigeration service and contracting business in Cleveland for a number of years and at the time of his death was co-owner of Sterling Refrigeration, Inc.

Mr. Wright had suffered from an asthmatic condition for several years which finally resulted in a heart complication causing his death.

His activities in the industry gained for him a wide acquaintanceship, and his willingness to assume responsibility in advancing the interests of those engaged in the industry will long be remembered by his wide circle of friends who mourn his passing.

Although ailing during the recent 10th Annual RSES Convention, he nevertheless accepted the appointment and served as chairman of the service truck display committee.

His activity in the Refrigeration Service Engineers Society dated back to his affiliation as an active member on October 23, 1936. He advanced to certificate membership on March 6, 1941. He served as president of Cleveland Chapter for two years. He was elected treasurer for seven consecutive years. Other offices to which he was elected included secretary of the chapter.

He was fifty-one years old at the time of his demise. Survivors included his widow, Mrs. Donna Covert Wright; two sons, Walter C. and Douglas E.; two daughters, Mrs. Daisy M. Ramsey and Mrs. Pat Haldeman; three brothers, Malcolm, Charles and Frank, and a sister, Mrs. Pearl Abel.

Chapter Notes

• **ARROWHEAD CHAPTER, Riverside, Calif., Jan. 17**—This was the night of the chapter's first anniversary party. A buffet dinner was served, after which a floor show was put on by the Baker Hemphill School of Dancing. Frank Frazier acted as Master of Ceremonies and introduced the speaker of the evening, J. Pat Riley, California State Assn. President, who gave an interesting talk on the advancement of the Society in California. The evening was topped off by dancing to the music of Earl White and his Grenadiers. Everyone had a good time and went home smiling and happy.

At the Feb. 9th meeting, a prize of a new style flare block and yoke was donated by Chas. Olbright, to go to the member having the highest percentage of correct answers in a question and answer contest.

The March 8th meeting featured Bill Richards of the Phillips Injector Co. on the educational program. Mr. Richards gave an illustrated lecture on Phillips float valve and injectors—their uses and applications. A pair of Vice-Grip pliers, donated by Van's Supply, and a Serviceman's Remote Thermometer, donated by Refrigeration Sales & Maintenance, were the rewards for the holders of the lucky numbers. Mr. Pantzer won the pliers and Mr. Kerr the thermometer, but Mr. Kerr returned the thermometer to the chapter to be auctioned off to the highest bidder.

• **ATLANTA CHAPTER, Atlanta, Ga., Feb. 23**—Tommy Carnell gave a report on the National Convention and explained the purposes back of forming a Regional Chapter to be known as the Southern Association, and it was voted that the chapter affiliate itself with the Southern Association. Following the meeting a delicious steak and chicken dinner was served.

• **AZALEA CITY CHAPTER, Mobile, Ala., Feb. 18**—New officers to serve for the year 1948 are: N. F. Brown, **President;** L. K. McMullen, **1st Vice-President;** Fred S. Hybart, **2nd Vice-President;** Frank G. Jackson, **Secretary;** and H. L. Yarbrough, **Sergeant-at-Arms.** Board of Directors—J. A. Robertson, A. D. Johnson, C. R. Pettus, J. A. Daigle. During the educational program, Harry Dawson and Frank Martined of the Acme Refrigeration Supplies of New Orleans, discussed the proper application of driers, and an interesting session followed in which the members took part.

During the business session of the March 17th meeting, Harold S. Stewart was accepted as a Junior Member. D. P. Breland, Chairman of the Educational Committee, read a letter from L. A. Staebler, Director of Research and Development of Universal Cooler Corp., relative to his paper on the theory and use of a capillary tube; also a letter from R. L. Williams of Kinetic Chemical Co., concerning his paper on Freon-22. Copies of these papers were distributed to the membership for study. Then Mr. Breland, assisted by Joe Daigle, presented a very interesting slide film on the manufacturing process of Par-Lynch condensing units.

A. L. Robertson, International 2nd Vice-President, presented the charter to the Green Bay Chapter, February 28, during a very interesting meeting at which the Mayor of Green Bay and his wife were present and the Secretary of the Chamber of Commerce acted as Master of Ceremonies. Six or seven inches of snow fell during the night but in spite of this the meeting enjoyed a good turnout. Paul Reed, International Educational Director, talked on the subject of "Refrigerant Cylinders."

Pictured above left to right are Milton Noel, Secretary of the Chapter; J. A. Mekel, President; and Donald Bloy, Treasurer. In the center picture are Mayor Domonic Olejniczak and his wife, and in the lower photo are the Secretary of the Chamber of Commerce, John Borgenson and Mrs. Borgenson.

• BERKSHIRE COUNTY CHAPTER, **Pittsfield, Mass., Feb. 12**—This was the night of the chapter's charter presentation which took place at The Loyal Order Moose Hall and was officiated by New England States Association President, Arthur W. Andreen, accompanied by James Felix and Gerald Orfitelli of Central Connecticut Chapter. In spite of the snowstorm, the presentation was well attended. Arthur Andreen gave a brief resume of the objects of the society and pointed out the many educational programs available to hold the interest of the members of the new chapter. A brief business meeting was followed by a fine luncheon while the usual round table discussions continued. Officers to serve this chapter for 1948 are: Albert Garnish, **President;** Robert Smith, **1st Vice-President;** Elmer Baldwin, **2nd Vice-President;** Ray Allen, **Treasurer;** Leonard Whitney, **Secretary;** Arnold Branlt, **Sergeant-at-Arms;** and Elmer Baldwin, **Chairman, Educational Committee.**

The educational program of the March meeting included a talk by Mr. Meicklejohn on drying agents. The door prize donated by Frank Myers, was won by Harry Hodgkins.

• BLACKHAWK CHAPTER, **Burlington, Ia., Mar. 1**—At the suggestion of W. L. Shellmyer it was decided to have a question and unusual experiences box, which are to be brought before the members once each quarter. Each winning suggestion will receive a gift tool from the Pioneer Supply Co. E. R. Anderson, Educational Chairman, gave a discussion on Freon-22 during the educational portion of the meeting. Refreshments were served after adjournment.

• BOSTON CHAPTER, **Boston, Mass., Feb. 10**—There were 52 members present at this meeting. Chas. C. E. Harris was called upon for a report on the coming convention next October, and then introduced George Mills, Director of Public Relations Bureau for REMA, who spoke briefly on the convention. Next, Mr. Jackson of Kold Hold Mfg. Co., was introduced by Mr. Metcalf, Chairman of the Educational Committee. Mr. Jackson spoke on applications of cold plates, showing some interesting slides of trucks with plate installations.

The March 9th meeting was attended by 72 members, who heard an educational talk by Messrs. Goodwin and Howell of Westinghouse Corp., on the Precipitron. Plans for an Annual May Party were discussed and several new members were accepted into the chapter during the business session.

• CANTON REGIONAL CHAPTER, **Canton, Ohio, Feb. 17**—The meeting was preceded by a dinner, after which an active business meeting was held. The members were fortunate in having as their guest speaker, Ken Newcum of the Remco Co., who discussed the value of driers and heat exchangers stressing the best location of installation to obtain the best results, and noting the non-plugging advantages of the Remco drier.

• CENTRAL NEW YORK CHAPTER, **Syracuse, N. Y., Feb. 10**—This meeting was held at the Carrier Corp. Thompson Road Plant. In this building, covering more than 13 acres under a single roof, the Carrier centrifugal compressors are built. The opening talk was given by John F. Chester, who then introduced Clark Shields, Centrifugal Engineer, who presented an interesting talk on the centrifugal compressor and its applications. At the conclusion of this talk, Mr. Shields held a question and answer period which was thoroughly enjoyed by all. Next, the members were escorted on a tour of the plant. The first stop was at the milling and machining section where the large castings are drilled and bored—proceeding on to the various stages of assembly and finally to the run-in test and final inspection. All present agreed that it was a most interesting and educational evening.

At the March 9th meeting the following officers were elected for the year: Harrison W. Capron, **President;** Louis J. Liberati, **Vice-President;** Richard A. Alletzhauser, **Secretary-Treasurer;** and Robert D. Oakley, **Sergeant-at-arms.** Paul Domke of Mueller Brass Co., spoke on the subject of driers, heat exchangers, valves, etc., illustrating with cutaway samples. A demonstration of the proper method of cleaning fittings, use of flux and application of heat for soldering, proved very educational to all.

• CENTRAL PENNSYLVANIA CHAPTER, **Harrisburg, Pa., Feb. 19**—The educational portion of the evening consisted of a talk by Jack Reilly of Bush Coil Co. and Heat-X-Changer Co., on the fabrication of coils and the heat exchanger and beverage coolers by the Heat-X-Changer Co. A. D. Wynn and John Stank won the door prizes.

• CHARLESTON CHAPTER, **Charleston, W. Va., Feb. 13**—Guests in attendance included Don Thompson, P. J. Mosley, B. J. Miller and Lewis Pendelberry, all of Coyle & Richardson; and D. G. Fleshman of Frame Refrigeration. John Deskins led a lively discussion on various subjects including the use of telephone in service trucks, the use of Trace in a system with silica gel driers, the availability of recordings of the principal speakers at the Convention; and plans for future conventions. Meeting nights were changed to the second Friday of each month.

• CORPUS CHRISTI CHAPTER, **Corpus Christi, Tex., Mar. 9**—During the business meeting, Adolph Romike, Jr., was elected to membership, and Victor Skarke brought out some interesting and educational points concerning a refrigeration code. It was decided that several members and officers of the chapter attend the Houston Chapter meeting in April, and due to the fact that the meeting falls on the same night as the meeting of Corpus Christi Chapter, it was voted to change the regular meeting date of the Corpus Christi Chapter for April.

• CUMBERLAND TRI-STATE CHAPTER, **Cumberland, Md., March**—The charter was presented to this chapter by International Sergeant-at-Arms W. E. Booth, during a dinner meeting held at the Shrine Club. The

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The Philadelphia Chapter enjoyed a soldering contest February 27, conducted by Francis F. House of the Mueller Brass Co. The above picture shows the group at work during the contest. There were 90 in attendance at this meeting but due to the lack of time only 8 were involved in the contest.

In this picture winners of the Philadelphia Chapter soldering contest are receiving their prizes from Francis F. House of the Mueller Brass Co. From left to right the winners are: 1st prize, Frank Stenton, a Mueller hermetic kit; 2nd prize, Bruno A. Sestito, a Mueller testing manifold; 3rd prize, Arthur W. Shaw, a set of Mueller cleaning brushes. In the background are Morrie Silver, Sergeant-at-Arms; Gus Tornari, member; Bob Kiel, President; and Bill Waite, Vice-President.

entire group was enthusiastic and asked many questions concerning the Society and expressed the need for the benefits it can offer them. Ralph Harmon, temporary Secretary, was congratulated for carrying out his duties with efficiency and dispatch.

• DAYTON CHAPTER, **Dayton, Ohio, Feb. 12**—Quite a lengthy business session was held, and following this a short talk was given by Mr. Becker on the shortcomings of home freezers both in construction and performance.

February 26—The business meeting occupied a good part of the evening and after its completion the Educational Chairman gave a very interesting talk on multi-stage systems and low temperature installations.

• FORT WAYNE CHAPTER, **Fort Wayne, Ind., Mar. 8**—Official meeting night was made for the second Monday of each month. Ed Riccio of Chicago Chapter was present to explain the advantages of a State Chapter, and the chapter voted to send Harold Braun and Eugene Knepper to the formative meeting. During the business session, members of the Lima, Ohio, Chapter were called upon for brief talks and reported items of interest to all present. There were 45 in attendance at the meeting.

• FURNITURE CITY CHAPTER, **Grand Rapids, Mich., Mar. 2**—Ed Kellie of American Injector Co., was the speaker of the evening and gave a highly educational talk on oil separators. The first door prize was won by Ade Hoek and the second by Pete Hendrickse.

• GRANITE STATE CHAPTER, **Manchester, N. H., Mar. 9**—An excellent roast beef dinner was served to 43 members before the meeting—although eight more persons came after dinner to attend the meeting. After the business portion was over, J. Lawrence Hall introduced August Ulbert, Eastern Manager for Alco Valve Co. Mr. Ulbert talked on the early expansion valves and developments and improvements to date. A demonstration with the use of the glass evaporator was then conducted by Wesley Alcott.

• GREENSBURG CHAPTER, **Greensburg, Pa., Jan. 5**—Officers for the coming year were elected as follows: **Edwin Harris, President; Joe Michaelson, Vice-President; Paul Nutter, Secretary; Bob Miller, Treasurer;** and **Sam De Cola, Sergeant-at-Arms.** Board of Directors—Harold DeBolt, Clarence Hall and Harold Miller. Bob Miller introduced the speakers on the educational program who were Del. C. Albright of Automatic Products Co., Milwaukee, and A. L. Neva from the Cleveland branch of the Automatic Products Co. Mr. Albright chose for his subject the material, operation and parts used in the production of A-P valves, while Mr. Neva operated a picture machine showing slides of automatic and thermostatic expansion valves, suction pressure regulators, and the new No.

211 and 212 thermal expansion valves. The chapter thanked both men for an interesting and educational evening.

• GREENVILLE CHAPTER, Greenville, S. C., Mar. 10—After chapter business was dispensed with, Bill Durham and Mac Kennimore showed two educational films entitled "Quieting a Noisy Refrigerator" and "Checking the Electrical System." Wayne West's name was drawn out of the hat for the $6.00 jackpot.

• HEAD OF THE LAKES CHAPTER, Duluth, Minn., Mar. 9—John Hall of the Automatic Products Company was the guest speaker of the evening. He described the refrigeration valves put out by his company and showed slides along with his talk. Many good pointers were brought out in his discussion and he answered all questions put to him by the audience.

• HOUSTON CHAPTER, Houston, Texas, Mar. 8—There were 43 members and guests at this meeting, held in the office of the Thermal Engineering Company. After the business meeting, Charles C. Quinn of Power Regulator Co., was introduced by President Evans, following which Mr. Quinn gave a very vivid description of types of controls used in the air conditioning industry. Through the use of slides and diagrams he showed the delicacy of construction and the necessity of a thorough knowledge of the fundamentals of their operation in order to properly service them. His talk proved very instructive to all.

• HUB CHAPTER, Compton, Calif., Mar. 17—A. T. Riley and J. Pat Riley, both of Long Beach Chapter, were visitors at this meeting. A. T. Riley gave a very interesting talk on the seeing eye dog school at Long Beach, and his son, J. Pat, gave a report on the International Convention held recently at Cleveland, and also the pattern being drawn by the California Association, of which he is President, in regard to educational material for the refrigeration service engineer.

• INDIANAPOLIS CHAPTER Indianapolis, Ind., Feb. 24—After the business meeting was completed, Mr. Price of Detroit Lubricator Co. gave a talk about his company's products and explained the set-up on their new warranty for their valves. Slides were also shown and Mr. Price generously offered to appear before the chapter again and show more sections of Detroit Lubricator Company's educational slides.

• KANSAS CITY CHAPTER, Kansas City, Mo., Feb. 19—During the business meeting, C. R. Visger gave a most interesting report on the International Convention. A resolutions committee was appointed, and other chapter matters were brought up and settled before adjournment.

• KEY CITY CHAPTER, Dubuque, Iowa, Mar. 3—Having concluded the business part of the meeting, the rest of the evening was spent viewing the motion picture "Bridging the San Francisco Bay," and seeing Dubuque-land's marvel of magic, Leo Link. Refreshments were then served.

• LA CROSSE CHAPTER, La Crosse, Wis., Feb. 6—At the request of Vice-President Roellig, a brief description of the All-Industry Exhibition was given by Mr. Reiman. A general discussion relating to new refrigeration products followed.

• LAKE CHARLES CHAPTER, Lake Charles, La., Feb.—International Director C. S. Tucker presented the chapter with their charter, following a dinner enjoyed by 26 members and guests. After obligating the members, a lively "bull" session was conducted in which all the members took an active part.

• LIMA CHAPTER, Lima, Ohio, Feb. 19—The educational program consisted of a demonstration put on by Linde Air Products Co. Their representatives, namely, Phil Huffard, Tom White, Bert Fienthal, C. A. Heffernon, Charles Allison and Dewey Laughlin aided in the demonstration and held a question period after it was completed. An interesting evening was spent by those in attendance.

• MEDINA CHAPTER, Medina, Ohio, Feb. 9—The following officers were installed by Oren Nichols, Jr., President of the Buckeye Association: Melvin Welton, President; Albert Gehrig, 1st Vice-President; Leonard Cain, 2nd Vice President; Maurice Ferell, Secretary-Treasurer; Carl Dannemiller, Sergeant-at-Arms; and Esmer Blosser, Educational Chairman. Esmer Blosser then presented a fine demonstration on the use of a dual resistance thermometer and how to set an expansion valve by superheat.

At the March 8th meeting Elmer Vunderink discussed the jingle contest pertaining to safety, and urged every member to send several entries to George Schuld of Cleveland who will pick the best entry and award the prize. A question and answer period wound up the evening.

• METROPOLITAN NEW YORK CHAPTER, New York, N. Y., Feb. 27—This was a large meeting of 51 members and 27 guests. On the educational program, Dan Cordella of Carrier Corp., gave a talk about a new line of direct drive unloading type compressors, accompanied by slides. A question and answer period was held immediately afterward. International First Vice-President Chas. C. E. Harris was present and gave a short but interesting talk. The door prize for the evening was won by F. Foley.

• MIAMI CHAPTER, Miami, Fla., Feb. 25—After chapter business was dispensed with, O. W. Brown conducted the educational portion of the program. Refreshments served after adjournment were furnished by Berner-Pease Company.

• MIDLAND EMPIRE CHAPTER, Billings, Mont., Mar. 9—Speaker of the evening, Joe Page of Detroit Lubricator Co., gave an interesting showing of Detroit valves and controls with the aid of the now famous Frank Carter "wire" lecture-movie. Refreshments

were served, preceded by a wire transcription made by Willard Spencer over the Detroit Lubricator wire-recorder.

• NIAGARA FRONTIER CHAPTER, **Buffalo, N. Y., Feb. 21**—This was the night of the chapter's annual installation banquet and dinner-dance held at the Hotel Stuyvesant. The following officers were installed: Bert Miller, **President**; Wm. Goeckel, **Vice-President**; Edward Orsolits, **Treasurer**; Thomas Secord, **Recording Secretary**; Bert Ziegler, **Corres. Secretary**; and Walter Bobzien, **Sergeant-at-Arms**. Board of Directors—Howard Hornung, Henry Pohl and Leon McCormick.

New officers of Niagara Frontier Chapter, installed February 21, are left to right, back row: Ed. Orsolits, Treasurer; Tom Secord, Rec. Secretary; H. Hornung, Director; Leon McCormick, Director; Wm. Goeckel, Vice-President.

Front row, left to right: Bert Ziegler, Cor. Secretary; Bert Miller, President; Henry Pohl, Director; and Walter Bobzien, Sergeant-at-Arms.

A delicious dinner was served and an entertaining floor show was enjoyed by all. Dancing followed until the close of the evening. Guests were present from Toronto and other parts of Canada and also from the Rochester Chapter.

The March 13th meeting had an attendance of 33. Through the cooperation of Mills Welding Supply Co., a welding demonstration was given by Bill Eves and John Schrott, Jr. of Linde Air Products. The door prize of a five in one Prest-O-Lite set, donated by Mills Welding Supply, was won by Leon McCormick.

• ONTARIO MAPLE LEAF CHAPTER, **Toronto, Ont., Feb. 4**—International President W. J. Marshall was called upon to give a brief report on the future activities of the Society. The balance of the meeting was devoted to chapter business.

• PENINSULA CHAPTER, **Newport News, Va., Mar. 11**—During the business meeting, A. Long was elected President to replace George Blount; W. R. White was elected to 1st Vice-President to replace W. W. Poindexter; and C. D. Mitchell was elected 2nd Vice-President to fill the place vacated by Mr. White due to his promotion. Because of the transfer of R. H. Fisch, a vacancy existed for Chairman of the Membership Committee and C. J. V. Murdock was appointed by the new president to fill this vacancy. A splendid educational program was given by Messrs. Barbour and Crowley of the Detroit Lubricator Co. Slides were projected on a screen and a P.A. system employing the latest wire recorder was used to lecture on such subjects as solenoid valves, analyzing field problems, testing expansion valves and moisture. Refreshments were served following the meeting.

• ROCHESTER CHAPTER, **Rochester, N. Y., Mar. 6**—This was the night of the chapter's annual dinner-dance, and immediately after dinner the following officers were installed by past-president George Davenport: John Mandell, **President**; Wm. Stenner, **1st Vice-President**; Glen Pemberton, **2nd Vice-President**; George Stear, **Secretary**; Robert Willi, **Treasurer**; Armand Nagel, **Sergeant-at-Arms**; and Lewis B. Nohle, Sr., **Educational Chairman**.

Tom Fahey master of ceremonies, presented the Honorable Frank Van Lare, Vice-Mayor of Rochester, who brought the city's greetings to the chapter. Roy Tygler of Frigidaire Corp., spoke on "Frozen Assets" before showing a film on salesmanship. Giles Hobin, a student at Eastman School, sang a few selections and led the group in singing. A magician then entertained, followed by round and square dances. The evening was a very enjoyable one for all present.

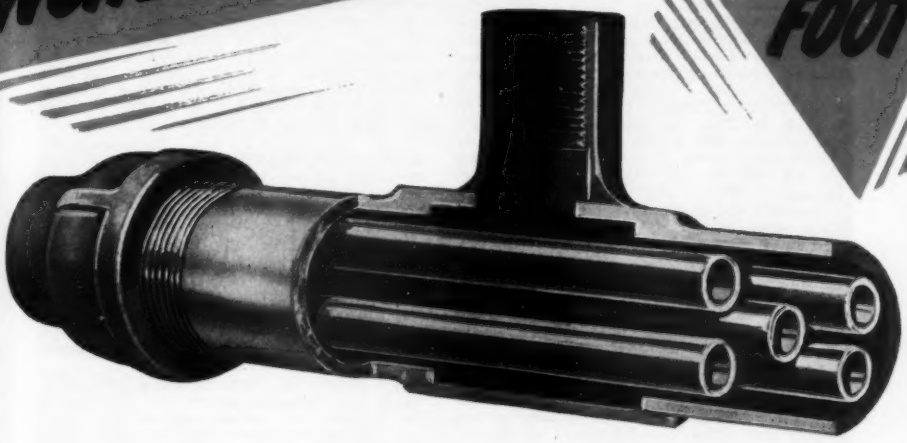
At the March 10th meeting there were 29 members in attendance. Educational Chairman Lewis B. Nohle, Sr., presented two films on "How to Test for Leaks." Coffee and doughnuts were served after adjournment.

• SACRAMENTO VALLEY CHAPTER, **Sacramento, Calif., Feb. 5**—After the business meeting, Mr. Heath of the Sacramento Municipal Utilities District gave a very enlightening talk on reverse-cycling, which was thoroughly enjoyed by the members and the 21 visitors present at this meeting. The chapter is happy to announce that they now have at their disposal a 16 millimeter, sound motion picture machine through the courtesy of Sears, Roebuck and Co.

• ST. LOUIS CHAPTER, **St. Louis, Mo., Feb. 24**—The educational portion of the meeting was devoted to a talk by John Spence of Hussmann Refrigeration, Inc., on open food display cases. Mr. Spence pointed out how vegetable departments in many stores had greatly increased their volume of sales through the use of these new open cases. The importance of refrigeration in getting the produce from the farms to the retail stores was also brought out. A film was then shown on processing and wrapping vegetables, preparatory to shipping them to the markets. Mr. Spence also gave the audience many valuable pointers in servicing the Hussmann open display case. Refreshments were then served.

• SAN DIEGO CHAPTER, **San Diego, Calif., Feb.**—Through the cooperation of the City of

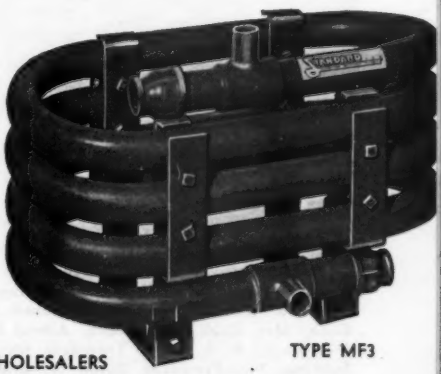
94 SQUARE-INCHES CONDENSING SURFACE PER FOOT



HIGH capacity per unit foot means less condenser length. This maximum heat transfer is a design feature of STANDARD MF condensers. Note the cut-away *heat exchanger tee* showing multiple tube construction.

All Type MF condensers contain a cluster of parallel tubes terminating in a brazed header at the *heat exchanger tees*. This assures long service-life and **accessibility for cleaning.**

Five multiple half-inch copper tubes are used in the MF 3 and 5 condensers. Smaller sizes are built with three tubes—larger sizes up to 15 tons rating are built with nine tubes, providing greater capacity with minimum space requirements.



TYPE MF3

All STANDARD Condensers are listed under Underwriters' Laboratories.

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San Diego, the chapter was fortunate enough to secure as a speaker, Carl Reupsch, administrative assistant to the city inspector. Mr. Reupsch was most helpful in explaining code violation, permits, safety precaution, etc. The members benefited greatly from the information gathered during this lecture.

• SEATTLE CHAPTER, Seattle, Wash., Feb. 3—A welding demonstration was given by Kenny Lutz and Elmer Bakke of Welder's Supply Co., Seattle. It consisted of welding copper to aluminum, copper to steel, aluminum to aluminum and cast iron welding. This was thoroughly enjoyed by the audience.

• SOUTHERN TIER CHAPTER, Elmira, N. Y., Feb. 19—This was the installation dinner and meeting held at the Langwell Hotel, attended by 30 members in addition to the new and retiring officers. Guests were Mr. Burlingame of Brunner Mfg. Co., and W. A. Richinbach of Sporland Valve Co., each of whom gave a brief talk. The remainder of the evening was spent discussing chapter business.

• SPRINGFIELD, MO. CHAPTER, Springfield, Mo., Feb. 25—The educational program of the evening was a lecture and discussion on electric motors as they pertain to the refrigeration industry. This program was conducted by Earl Wheat of Wheat's Electric Service, Springfield. There was so much interest and discussion by the members on this subject that it was decided to ask Mr. Wheat back to another meeting. At that time, picture slides and literature will be avaliable, and a very educational meeting is anticipated.

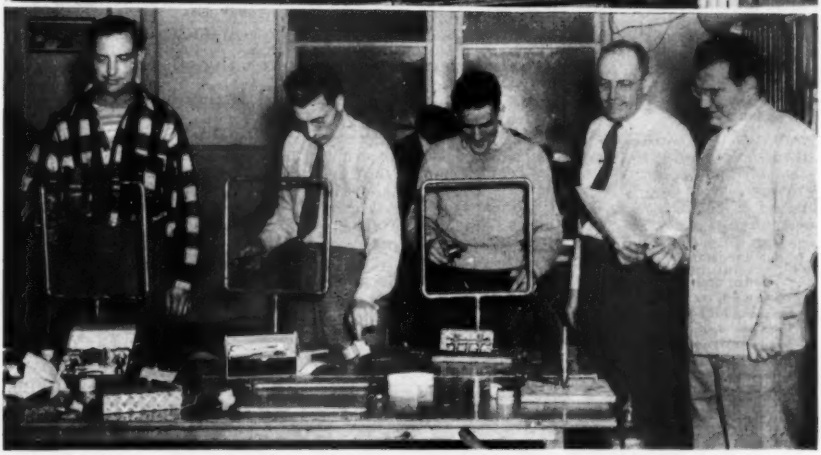
• TALL CORN CHAPTER, Cedar Rapids, Iowa, Mar. 4—Some entertainment was provided for this meeting, so after the business portion, a program of hillbilly music, songs, and jokes were presented by a group of four men known as Dempsey Jones and his Boys. The entertainment was enjoyed by all present.

• TOLEDO CHAPTER, Toledo, Ohio, Mar. 10—The business meeting was a lengthy one, during which the application of Kenneth Hummon was voted on and passed; the jingle contest was brought before the group; and a new meeting place was discussed. The Educational Chairman then gave a demonstration with the use of a glass evaporator. Door prize was won by Mark Dennis.

• TRENTON CHAPTER, Trenton, N. J., Feb. 18—After reports from all committees had been heard, Nicholas Cherkos, Chairman of the Educational Committee, gave a brief refresher talk on "Safety in handling refrigerants" and the benefits of the group insurance which most of the members now carry. His talk was most interesting and brought many questions from the floor. The 50-50 club drawing was won by Willard Parker. The door prize, a tube cutter, donated by Jaeger's Sales and Supplies, was won by George H. Borden.

The March 17th meeting was a most interesting one. After an active business meeting the program was turned over to the Chairman of the Program Committee, Mr. Harry Jaeger of Jaeger's Sales & Supplies, a local jobber, who introduced Francis F. House of Philadelphia, representing the Mueller Brass Co. Mr. House gave, as he has in the past,

The above photo was taken at a regular monthly meeting of Southern Arizona Chapter during a turkey dinner held in Tucson, Ariz. Shown left to right in the picture are: Norris Cook, Mrs. Cook, Sam Polito, Alfred Preciado, Mrs. Preciado, Mrs. Sciple, Ralph Sciple, Mrs. Bogle, G. A. Bogle, Treasurer, Mrs. Neitman, Fred Neitman, Mrs. Sullivan, Charles L. Sullivan, Vice-President, Byron W. Allen, Mrs. Allen, Mrs. Coffman, B. B. Coffman, Secretary; Mrs. Allen, Sanford T. Allen, William Clark, William K. Carter, Educational Chairman, Mrs. Carter, Mrs. Goodrich, Robert Goodrich (not showing), Jack Pattee, Mrs. Pattee, Mrs. Allen, Paul D. Allen, Mrs. McMahon, Miles E. McMahon and J. M. Balentine, Sergeant-at-Arms.



TRENTON CHAPTER HOLDS SOLDERING CONTEST

Pictured in the upper photo is the soldering contest held by the Trenton Chapter, March 17, and part of the crowd that participated.

In the lower photo the winners shown from left to right are: John Delvecchio, 1st prize; Don Belviso, 2nd prize; and Robert Reeve, 3rd prize. Next in line is Francis F. House of Mueller Brass Co. who conducted the contest, and next to him is Harry Jaeger of Jaeger's Sales & Supplies, a local wholesaler.

a very interesting talk on the proper methods of soldering; also on driers, heat exchangers and their proper method of installation. After this he conducted a very entertaining soldering contest sponsored by the Mueller Brass Co.

The first prize—a sealed unit test set—was won by John Delvecchio who is in business for himself in Trenton. His time was 5 minutes and 20 seconds. Second prize—a set of cleaning brushes—went to Don Belviso; and the third prize—a gauge manifold—was won

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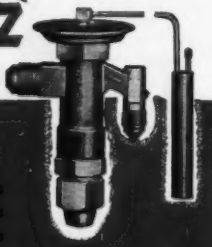

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by Robert Reeve. (Pictures will be found elsewhere in this section) These prizes and another sealed unit test set used as a door prize (and won by Henry Guear) were donated by the Mueller Brass Co. The 50-50 club drawing went to Robert Reeve. After the contest, Mr. Crowley of the Detroit Lubricator Co., gave a short but detailed report of his company's new policy on purchasing and exchanging valves. Thirty-nine members and a few guests present could not have spent a more interesting St. Patrick's night anywhere else.

• TRI-COUNTY CHAPTER, **Joliet, Ill., Feb. 21**—The speaker of the evening was Gordon Eubanks, and the subject was "'Illinois Professional Engineering Act." Mr. Eubank gave a detailed account of the law and examination necessary to become a registered engineer, after which he answered the members' questions. The balance of the evening was spent discussing chapter business.

• TWIN CITIES CHAPTER, **Minneapolis, Minn., Mar. 2**—Chapter business discussed included the new International Constitution and By Laws; a chapter party to be held in April; and the matter of electing the current president of the chapter as a delegate to the next International Convention.

• WESTCHESTER CHAPTER, **Westchester County, N. Y., Jan.**—Election of officers took place with the following results: Michael A. Ferraro, **President;** Anthony P. Lagano, **Vice-President;** Earl W. Jones, **Treasurer;** W. S. Durr, **Secretary;** and Bill Hardman, **Sergeant at-Arms.** After the meeting, Tom Byrnes of Imperial Brass Co. put on a tube bending contest that everyone enjoyed. Carmelo Valentine walked off the first prize; Tony Lagano won second; and Vic Gencarella, Mike Ferraro's helper, took third prize. Let the machnics beware when the helpers take prizes away from them.

At the Feb. 26th meeting, five new applications for membership were received, and during the business session the President appointed five committees whose activities went into effect as of that date.

• WESTERN MASSACHUSETTS CHAPTER, **Springfield, Mass., Feb. 24th**—The entire evening was occupied with chapter business, with no educational program reported. There were 47 members present at this meeting.

• WOLVERINE CHAPTER, **Lansing, Mich., Feb. 23**—The guest speaker of the evening was Ed Kellie of American Injection Co., whose talk hit upon variety of subjects, all of interest to the audience. The balance of the evening was spent in questions and answers.

LADIES AUXILIARY

• CLEVELAND AUXILIARY, **Cleveland, Ohio, Feb. 10**—During the business meeting, the following officers were elected to serve for the coming year: Mrs. Cecil Harnish, **President;** Mrs. Richard Burney, **Vice-President;** Mrs. Richard Hollingsworth, **Secretary;** Mrs. Emil Flanik, **Treasurer;** and Mrs. George Baumgardner; **Sergeant-at-Arms.** Board of Directors—Mrs. Paul Spring, Mrs. Joe Smylie, Mrs. T. W. Way, Mrs. Rod O'Flaherty, and Mrs. George Schuld.

Another meeting was held February 26th during which time an Entertainment Committee was appointed consisting of: Geraldine Spacone, Chairman, Alice McCloskey and Ann Debby.

• KANSAS CITY AUXILIARY, **Kansas City, Mo., Mar. 18**—Othie L. Riley and Mrs. Marvin Reid were guests at this meeting. It was decided during the business session to make a donation to the Red Cross. The raffle gift—a set of aluminum cake pans—was won by Mrs. W. Allan Brown.

• NIAGARA FRONTIER AUXILIARY, **Buffalo, N. Y., Feb. 13**—The meeting was held at the home of Mrs. Edward Orsolits, and plans for their installation banquet were discussed. Mrs. Keirn handed in her letter of resignation inasmuch as she felt she was unable to carry on these duties at the present time. Mrs. Goeckel offered to act as Secretary for at least a month.

• ROCHESTER AUXILIARY, **Rochester, N. Y., Feb. 9**—An oral report on the International Convention was made by Ora Mendall. Noteworthy among these events is the fact that Ora Mendall was elected 1st Vice-President of the International Auxiliary. During the meeting, Mrs. Louis Nohle resigned as Treasurer of Rochester Auxiliary, and Mrs. Gladys Sayles was elected to take her place.

• TWIN CITIES AUXILIARY, **St. Paul, Minn., Mar. 4**—It was voted that each member of this Auxiliary be responsible for raising a mininmum of $5.00 toward the treasury by November 1, 1948, if she wishes to be eligible to attend the Christmas party. Discussion was also held on the cooking demonstration at the May meeting.

★ ★ ★

"SURPRISE FOR JANIE"

NEWEST contribution to the refrigeration industry's home freezer education needs is a full-color, 16-mm sound film, "Surprise for Janie!" currently being made available by Kelvinator for free local showings through distributors and zones.

The new movie, which runs 24 minutes, tells an entertaining and instructive story of a young married couple who learn how much a home freezer may contribute to better living.

Designed to help do an essential job for the industry as a whole, the pleasing, human-interest film emphasizes the value of the home freezer as the newest of the major home appliances, and does not attempt to sell the Kelvinator home freezer specifically.

Tests of Color Tracers

(Continued from page 49)

the amount of color which would be necessary to give a proper indication. Color added to the crankcase immediately appeared in the discharge sight-glass, then in the liquid line and finally in the suction line sight. Total time required in the system described was 55 seconds. It was soon found that there was a minimum concentration of color necessary. When smaller amounts were used, the color concentrated in the crankcase and to a lesser extent in the evaporator, and the sight glasses gradually became clear over a period of 4 to 12 hours. Not until the concentration was built up to approximately the equivalent of 4 oz. of concentrate in a 1 h.p. unit (2 oz. for ½ h.p. unit) did the color continue to circulate at all times in the system. Even then there was some concentration in the crankcase over that appearing in the sight glasses. When the coil was changed from up-feed to down-feed a much better circulation of color was obtained.

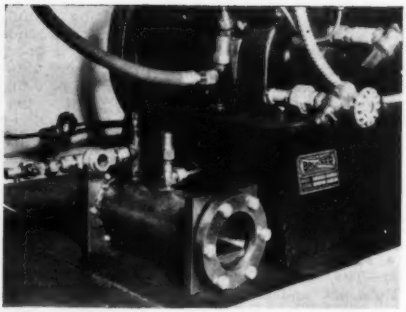
Tested in Commercial Units

To determine performance in different types of systems, tests were made in various commercial equipment, ranging from ⅓ to 2 h.p. lowsides consisting of vegetable cases, frozen food cases, and large flooded exaporators. Five tests indicated that there was a minimum satisfactory amount of color concentrate which had to be added to insure complete circulation of color at all times. In connection with the commercial testing one very interesting case occurred, indicating the limitations of the method, when a leak occurred in a part of a system where oil and color did not circulate. The details are quoted:

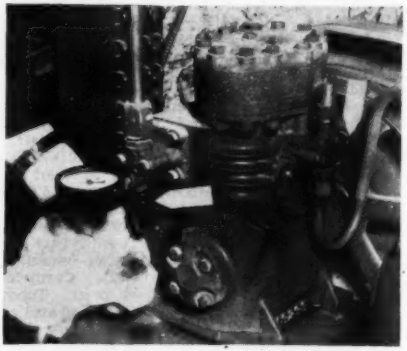
"Test No. 6 Dec. 4, 1946. ⅓ h.p. air cooled General Electric compressor. Operating 8 ft. meat display case. 2 oz. color concentrate added to suction service valve. No sight glass on this unit. No leaks evident through seepage and unit operating normally. **Feb. 5, 1947** butcher reports no refrigeration. Examination indicates entire charge has escaped. No indication of color on any portion of coils, lines or compressor unit. F-12 cylinder connected to crankcase and pressure of 35 lbs. built up in system. Leak disclosed by hissing sound and found to be due to failure of operating bellows in low pressure control. Control tied in the lowside at upper portion of compressor crankcase, above oil level. When remaining pressure was bled out at this point oil and color bubbled out due to foaming of crankcase oil."

To determine if the color concentrate produced any bad effects, the system was dismantled for examination. The compressor body was removed and disassembled. The oil remaining in the crankcase was in good condition and

(Continued on page 77)



In this view of the test equipment is a close-up of the glass end receiver. Also shown is the boiler type sight glass on the compressor crankcase.



Small artificial leaks were created and the machine operated for several hours to observe results. Arrows in the above picture point out the colored area resulting from two of these leaks.

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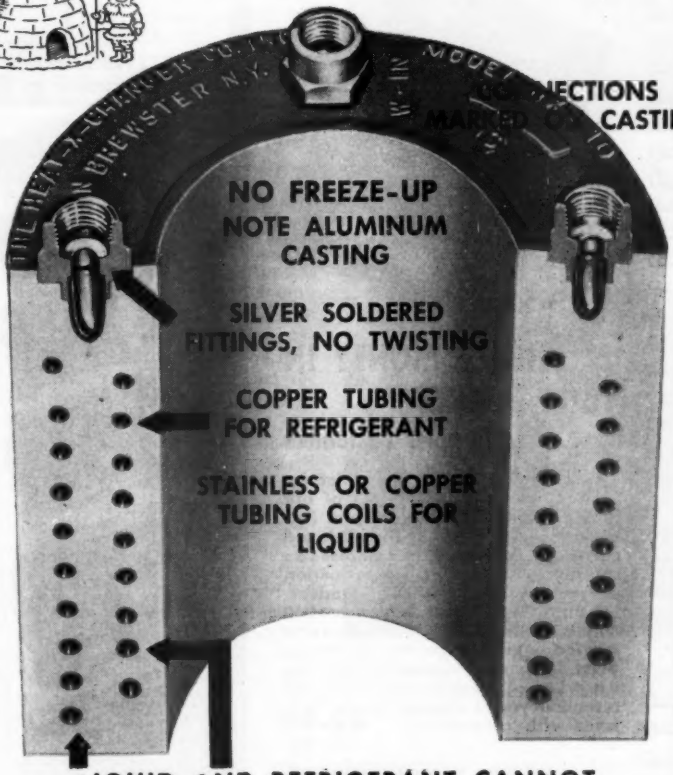

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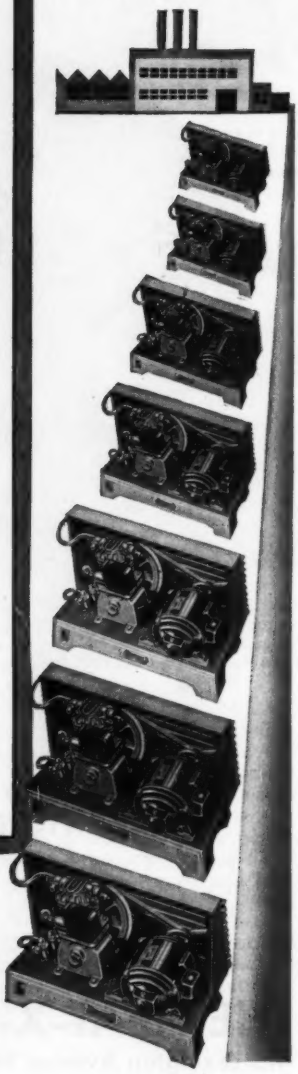


AIR AND WATER COOLED MODELS
¼ HP. TO 25 HP.

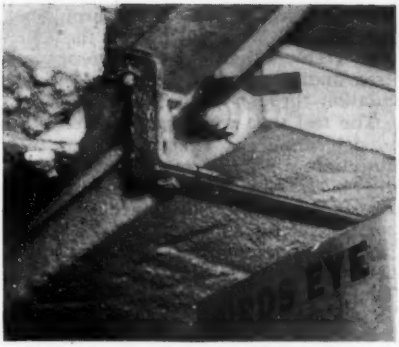
BRUNNER

Tests of Color Tracers

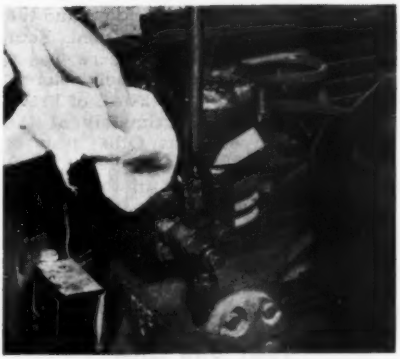
(Continued from page 74)

clear. The oil was placed in an open container and left to stand. No separation or sediment was noted. All interior parts of the compressor except bearing surfaces were well impregnated with color, particularly the rough casting surfaces. Color was readily removed with two washings of carbon tetrachloride, except for some rough surfaces which yielded with the application of a brush. Expansion valve needle and seat were clean. Compressor discharge valves were in good condition, well lubricated and smooth. It was noted that any gasket materials not under compression were thoroughly impregnated with color. The top cylinder head gasket was not carefully fitted and portions extended into the upper chamber and these portions had adsorbed much color. The same was true of the service valve gaskets. The adsorption of color on the surfaces of the system accounts in part for the minimum color addition requirements noted previously.

The following is a description of the operation of the unit with the standard amount of color applied. The test system was cleaned and washed out with carbon tetrachloride. It was charged with 24 oz. Freon, 16 oz. Capella oil, and placed in operation for one hour. Two ounces of color concentrate were added to the crankcase. A deep scarlet color showed immediately in the crankcase sight glass. Compressor operation was restarted and sight glasses observed. Slight color showed in discharge glass and bottom condenser sight glass immediately. The color gradually deepened there, and in the receiver and liquid line sight glasses. After about two minutes of continuous operation the color was also plainly noticeable in the suction line sight and the intensity of all the colors gradually increased. The unit was permitted to operate over night and the sights observed in the morning, after nine hours of continuous operation with blocked out controls. All sight glasses indicated colors of varying degrees, with the deepest color found in the crankcase, and the least color in the compressor discharge line. The unit was restarted after an idle period of 12 hours. Violent



Spectacular results are obtained when leaks occur on frosted sections such as this cold plate installation. The red splash of color at the point of leakage shows vividly against the white frosted surface.



A small suction line leak on a ½ hp. unit is clearly indicated by the color leak detector in this photo.

foaming took place in the crankcase, but after five minutes the oil began to return to the crankcase, and assumed the proper level within one hour. Excellent color observed at all sight glasses. The system was left to operate at 33 lbs. cut-in and 12 lbs. cut out. It was observed twenty-four hours later with good color in all sight glasses. Again there was a gradual lightening on all sights, with the exception of the crankcase, which became darker. The unit was permitted to operate at the same settings as above for three days. Observations made during this time indi-

cated good color at all sights throughout the system. With down-feed the color was greater than when up-feed was used, indicating greater ease of oil circulation through the system.

The test unit was experimented with to determine the effectiveness of leak detection. Under normal operating conditions a slight leak was made by slightly backing off the flare nut on the compressor discharge. The leak was adjusted to the point where it was just barely perceptible with a halide torch. The unit was left operating overnight on a normal cycle. Seven hours later a check showed oil dripping at the point of leakage with excellent color showing all around the leak. The loss of refrigerant which had occurred in this period was not sufficient to cause any visible lowering of the liquid level in the receiver, and there was no change in oil level in the crankcase. This leak was allowed to remain four days and the oil which came out was collected. Four and a quarter days later there was a total of ½ oz. of oil, all intensely colored. During this period about 24 oz. of Freon had leaked out, approximately at the rate of ¼ oz. per hour. Other tests of smaller artificially created leaks were made at various points in the lowside and on the compressor body and were satisfactorily d e t e c t e d. Particularly striking were leaks which occurred at points on the evaporator where frost had collected, where uncolored oil would not have been noticed.

Tests with Drier

A test with the normal quantity (2 oz.) of color concentrate in the test system was made and a silica gel dryer in the liquid line. The color observed in this system was somewhat lighter than previously, but color was still evident thruout the system over the two day period of the test. The system was pumped down and the dryer removed and examined. The silica gel contained considerable color, but no more than seemed to have been collected by the compressor crankcase castings. Addition of more color concentrate to the system when the dryer was put back, indicated no further adsorption by the silica gel.

A 2 h.p. Copeland air-cooled compressor operating four Dole holdover plates, mounted horizontally with a twin expansion valve feed was a typical commercial unit tested. The charge was 18½ lbs. of Freon and 4 lbs. of oil with a total of 9 oz. of color concentrate (8 oz. would be the normal amount.) All sight glasses indicated color at all times and on starting up after each cycle a good color showed up throughout the system.

Color Travels with Oil

The authors of the report found throughout that the color travels chiefly with the oil and is subject to the advantages and limitations of oil circulation in a refrigerating system. However, the tests of leak detection with color tracers has shown that it is almost impossible to eliminate the circulation of color, even with the use of oil separators, and that as a practical method of detecting small leaks considerable success is to be expected in most applications.

★ ★ ★

SUIT SETS PRECEDENT

IN A SUIT filed recently by Eli G. Frankenstein, Cincinnati attorney and receiver of the National Industries, Inc. refrigeration firm of Cincinnati, six directors were named defendants in which judgment of $29,072 was asked.

Frankenstein charged that the articles of incorporation for National Industries, November 26, 1946, provided that its business should begin with a capital stock of $50,000. He claimed that no capital was paid in before the company started business. The company continued in business until September 23, 1947.

Counsel for Frankenstein believed that the suit was the first of its kind ever to be filed in Ohio courts.

Directors Liable

The suit contends that directors are jointly and separately liable for the debts of the corporation up to the aggregate amount of capital specified in articles of incorporation.

Defendants in the suit filed in Hamilton County Common Pleas court are Orville R. Sherrow, Carlton F. Nicholas, Carl Jesse, Howard M. Jesse, Leonard M. Jesse and Nathanial C. Jamison.

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Methyl Chloride

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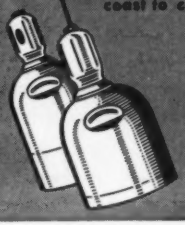

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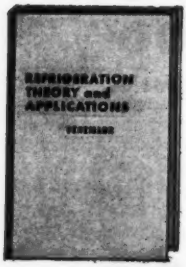

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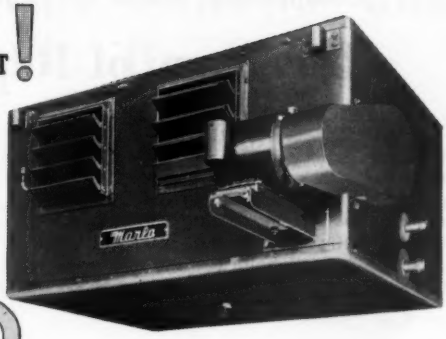

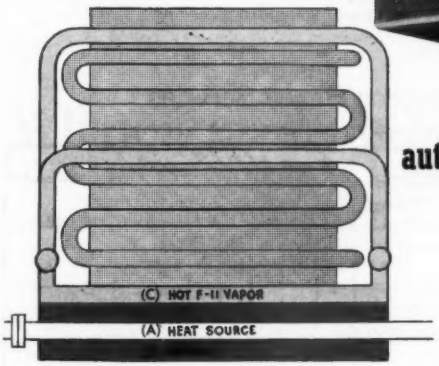

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HERE'S HOW IT WORKS: Heat source (A) vaporizes the sealed charge of Freon 11 (Trichloromonofluoromethane) in boiler (B). Vapor circulates through tubing (C) interspersed between refrigeration coils, quickly defrosts them

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* May we send you descriptive literature?

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Where You Can Send That Hermetic Unit, Compressor, Motor Or Control To Be Repaired

Directory of Repair Services

IF YOU are one of the service companies who occasionally have a hermetic unit to be rebuilt, a motor, compressor or control to be repaired but do not know where to send it, you will find the following "directory of refrigeration repair services" helpful. As a service to its readers, THE REFRIGERATION SERVICE ENGINEER invited companies specializing in the repair of specific items on a wholesale basis to write us. The results of this invitation are tabulated in the following tables. Before shipping parts for repair, write the repair company for shipping instructions, flat rate prices and other information.

Directory of Refrigeration Repair Services

Company names and addresses and the repair service (X) they offer service companies.

Company Name and Address	Hermetic Rebuilding: All Makes	Hermetic Rebuilding: Specializing in (See Abbreviations!)	Compressor Rebuilding	Compressor Valve Plates	Motor Rewind	Cold Controls	Exp. Valves	Water Valves	Other Services
ALABAMA									
Birmingham Refrigeration Co. 515 - 17 St., Ensley 8, Birm.	X		X		X				
CALIFORNIA									
Acme Refrigeration Co. 921 San Pablo Ave., El Cerrito		Gru	X						
Willis Refrigeration Serv. 1110 E. Broadway, Long Beach 2		GE-Cros-West-SW-Kel-Leo							Coldspot check valves
Refrigeration Service, Inc. 3109 Beverly Blvd., Los Angeles				X		X	X	X	Crankshafts, float valves
Utility Thermostat Co. 4011 Halldale Ave., Los Angeles						X	X	X	Pressure switches
CANADA									
Benoit Refrigeration Reg'd. 1979 Jean-Talon St., Montreal, Que.	X		X	X					
Snow Queen Refrig. Serv. 5983 Park Ave., Montreal, Que.									Frigidaire low side floats
Standard Refrigeration, Ltd. 213 Berry St., St. James, Man.		Leo-SW-Kel-Cros-Cold	X	X		X	X	X	Crankshafts, high side floats
CONNECTICUT									
Joseph Simons Co. 271 Sheldon St., Hartford			X						
DIST. OF COLUMBIA									
Jenkins Refrigeration Service 2912 - 2nd St., N.E., Washington	X		X	X	X	X	X	X	Crankshafts
GEORGIA									
Orr Refrigeration 668 Highland, N.E., Atlanta		Cope	X	X					Low side floats
Wyman P. Guye 7th & Telfair St., Augusta	X		X					X	
HAWAII									
Fixture Installation & Serv. 1516 Nehoa St., Honolulu	X		X		X	X			

Abbreviations: Bru - Brunner; Car - Carrier; Chief - Chieftain; Cold - Coldspot; Cope - Copeland; Cros - Crosley; Frig - Frigidaire; GE - General Electric; Gib - Gibson; Gru - Grunow; Hot - Hotpoint; Kel - Kelvinator; Leo - Leonard; Nor - Norge; Phil - Philco; SW - Stewart-Warner; Tec - Tecumseh; West - Westinghouse.

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2. Who does not sell at retail.

2a. Who does not sell refrigeration merchandise of any description, through his own appointed franchised or exclusive dealers.

3. Who does not perform installation or service except as noted in Number 4.
4. Who may, however, perform shop repair work at wholesale, to the trade only, as defined in Number 7.
5. Who does not contract for installation or service.
6. Who does not compete with the trade as defined in Number 7.
7. The term "trade" is defined to include the following: Service Engineers, Dealers, Machine Distributors, Contractors, and all other recognized trade outlets.

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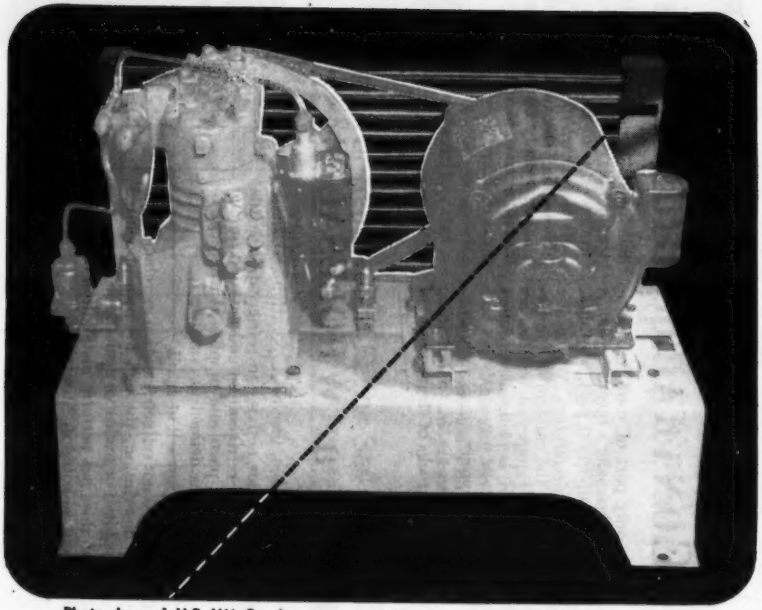
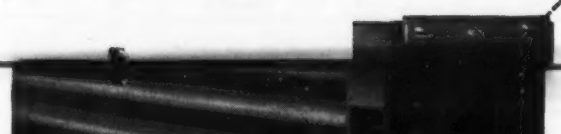
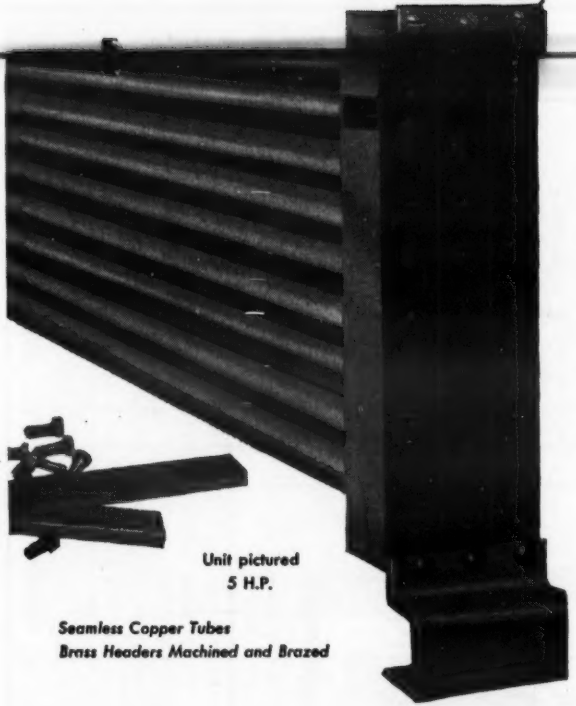


Photo shows 1 H.P HM Condenser at work in a typical commercial refrigeration unit.



As the age of most water-cooled condensers increases less refrigeration is received. Your operating costs, in the form of increasing water and electric bills, will rise because your unit must stay in operation longer to provide



Unit pictured
5 H.P.

Seamless Copper Tubes
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Directory of Refrigeration Repair Services – *continued.*

Company Name and Address	Hermetic Rebuilding: All Makes	Hermetic Rebuilding: Specializing in (See Abbreviations.)	Compressor Rebuilding	Compressor Valve Plates	Motor Rewind	Cold Controls	Exp. Valves	Heater Valves	Other Services
ILLINOIS									
Acme Control Service 5525 Lawrence Ave.,Chicago 30						X	X	X	
Atlas Refrigeration Ser.,Inc. 6949 S. State St., Chicago		GE-West-Kel-Nor-Cros							
Authorized Service Co. 4255 Milwaukee. Chicago 41	X		X	X	X				
Barger Refrig. Serv. Co. 7144 Vincennes Ave.,Chicago 21	X		X		X				Crankshafts, machine shop work
Circle Valve Repair 5258 Ferdinand St.,Chicago 44							X	X	
Exchange Mart 2424 Irving Park, Chicago 18	X		X			X	X	X	Kel. low side evaporators, low side floats
Refrigeration Control Serv. 4840 S.Springfield,Chicago 32						X	X	X	
Refrigeration Maint. Corp. 321 E. Grand Ave., Chicago			X	X		X		X	Floats, evaporators, Condensers, Gen. Rep.
Trico Compressor Service 1135 N.California,Chicago 22			X						
Wholesale Refrig. Repair Co. 4025 W. Armitage, Chicago 39	X		X	X		X	X	X	Evaporators, electric motors
R.E. Wilke Refrig. Service 607 S. Main St., Kewanee		Gru-SW-Gib-Cros			X				
Sealed Unit Service Co. 2525 Lake St., Melrose Park		GE-West-Cros-Hot-Nor	X						Stator Rewinding
INDIANA									
Square Deal Supply Co. 904 N.Illinois St.,Indpls.4			X	X					Float valves
IOWA									
Steen Service Co. Carroll	X								
LOUISIANA									
Pierce Refrigeration Serv. 1617 Washington St., Monroe	X		X	X					
MAINE									
Plummers Electrical & Refrig. Serv., 32 Park Ave., Newport	X				X				
MARYLAND									
Sprinkel Refrigeration Serv. 832 W. 32nd St.,Baltimore	X		X						
MASSACHUSETTS									
Kenmore Engineering Co. Inc. 1311 Tremont St.,Boston 20		Cold	X	X	X	X		X	
Celson's Service 164 Washington St., Medford	X								
Rodgers & Wilson 134 Exchange, Worcester	X		X	X				X	High & low side floats, pumps for exchange
MICHIGAN									
Advance Refrigeration 829 E.McNichols Rd., Detroit3	X		X						
Michigan Hermetic Rebuilders 7712 Dexter Blvd.,Detroit 6	X								
Penquin Products Co. 21555 Grand River,Letroit 19	X		X						
Supreme Manufacturing Co. 2851 E. Court St., Flint 7		Cold-Chief-SW	X						

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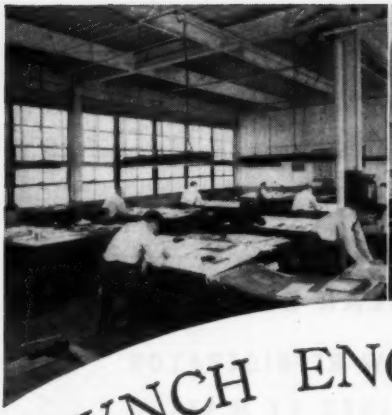

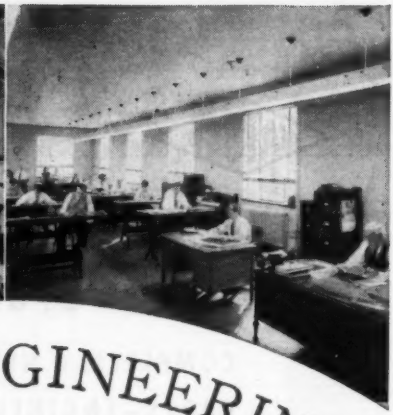

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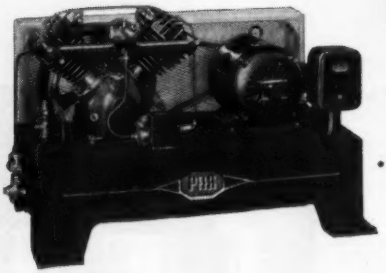

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LYNCH CORPORATION

Par Compressor Division TOLEDO 1, OHIO U.S.A.

Directory of Refrigeration Repair Services—*continued.*

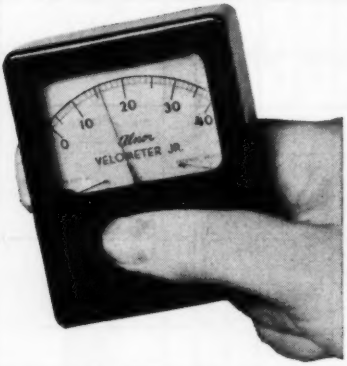
Company Name and Address	Hermetic Rebuilding: All Makes	Hermetic Rebuilding: Specializing in (See Abbreviations.)	Compressor Rebuilding	Compressor Valve Plates	Motor Rewind	Cold Controls	Exp. Valves	Water Valves	Other Services
MISSOURI									
Midway Electric Co., 630 Oak St. Trafficway, Kansas City 6					X				
Ruder Electrical Service 148 W. Holden, Lemay 23		Nor-Cold-Lec-Kel-Cros-Phil-Cope	X		X				
NEBRASKA									
C & S All Elec. & Rad. Serv. 28th & St. Mary Ave., Omaha 5	X		X		X				
NEW JERSEY									
Electric Appl. Ser. Engs. 143 Clinton Ave., Clifton		GE-Kel-Nor-Car-Cope-Cros-Bru							
Spinello Engine Co. 99 Woodland Ave., Kearny	X			X					Crankshafts
Johnson's Refrigeration 7539 Bergenline Ave., N. Bergen		Cold	X		X				
NEW MEXICO									
Appliance Laboratories 1008 S. Broadway, Albuquerque	X								
NEW YORK									
Improved Refrigeration Co. 203 Throop Ave., Brooklyn 6	X		X	X	X				
Progressive Refrigeration Co. 5326 New Utrecht Av., Brooklyn		West-Frig-Nor-Cros-Cold-Chief	X			X			Frig., Norge low side floats
Johnny Lawrence 27 Bedford Ave., Middletown		Cros	X			X			
R.H. Evans Refrigeration 12 S. Johnston St., Newburgh	X	All except Gibson & Bohn			X				
Circle Control Repair Serv. 105 W. 105th St., N.Y.C.						X			
Motors & Armatures, Inc. 40 Walker St., N.Y.C. 13					X				
Technical Refrig. Specialists 362 E. 180th St., N.Y.C.	X								
W & S Elec. Motor Repairs 318 E. 149th St., N.Y.C. 51					X				
OHIO									
Independent Elec. Mtr. Serv. 11610 Superior, Cleveland					X				
E.H. Wiedwald & Co. (Herm. Div.) 5390 W. 220th, Cleveland 16		Nor-Cold-Tec-Kel Cros-Cope-West							
Lima Radio & Refrig. Serv. 131 Memorial Arcade, Lima	X								
Hollenbeck Refrigeration 5807 Gilbert Ave., Parma 9		Gru	X						
Electric Motor & Appl. Repair 380 N. Lyman St., Wadsworth					X				
OREGON									
University Refrig. & Appl. Ser. 5503 N. Lombard St., Portland 3	X								
Vesgco Box 216, Vale			X	X	X	X		X	Evaporative air conditioners to order
PENNSYLVANIA									
Alfred H. Haas 30 W. 5th, Pottstown	X		X		X				
TEXAS									
City Refrigeration 1180 Lyle, Beaumont	X		X						

NEW AND IMPROVED EQUIPMENT

Information in this department is furnished by the manufacturer of the article described and is not to be construed as the opinion of the Editor.

Velometer

A NEW miniature Alnor Velometer Jr. — recently announced by Illinois Testing Laboratories, Chicago—answers the need for a portable, low-priced, direct reading instrument, giving instantaneous and precise measurement of air velocities in unrestricted areas.



This palm-sized Velometer Jr. was designed for heating, ventilating, air conditioning and refrigerating work not requiring the use of jet attachments. Completely self-contained, the Velometer Jr. —4 inches high, 3 inches wide, 1½ inches deep—weighs only 8 ounces and has single or double velocity range scales.

Alnor Velometer Jr. is calibrated to provide direct reading of air velocity in either feet per minute or miles per hour without timing, calculations or reference to tables and charts. Movement is double-pivoted, double-jeweled for increased accuracy. The air-actuated pointer vane and sensitive controlling hair springs are protected by a sturdy molded bakelite case.

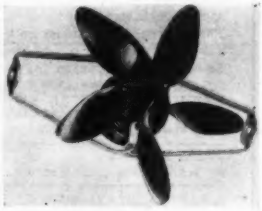
A genuine leather, nylon-stitched carrying case with brass fittings offers added protection and convenience when handling the Velometer.

Roto-Beam

A VENTILATING unit that is almost completely noiseless; non-corrosive, non-magnetic; free of vibration and distortion; and requiring a minimum of current for operation has been placed on the market by Roto-Beam, manufacturers of radiant air-circulators and scientific air devices for home and industry.

The propeller blade is molded in one piece of bakelite under 10,500 lbs. pressure per sq. in. Statistically and dynamically balanced with micro-motion accuracy in the mold, the design of the blade plus the acoustical characteristics of bakelite make this the most quietly operating air circulator ever produced. The full surface of the five blades is utilized from center to tip to impel the air in two beams moving at different speeds. Differential pressure between the air beams causes a pulsating, radiant movement of the air that duplicates the natural movement of the air outdoors. Its efficiency permits the use of a lighter, smaller, and less expensive motor to move the same amount of air.

The Roto-Beam unit is expected to exert a far reaching influence not only in the design and manufacture of equipment incorporating air circulators; but in addition, will probably affect competitive practices in the industry. Lowered production costs made possible by this unit will be reflected as much as five-fold in lowered retail costs.



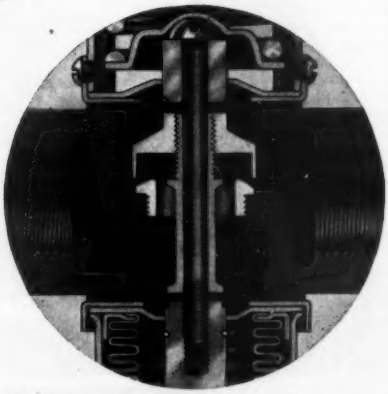
Max Weber, manufacturer and patent-holder, states that the propeller blade with set screw is also available to manufacturers of ventilating, air conditioning, heating, and other equipment necessitating air transfer. Makers of refrigeration units, driers, etc., can also effectively utilize the advantages of the Roto-Beam propeller. Window, attic and double wall ventilation, intake and exhaust assemblies, vehicle ventilators, and hot and cold air ducts are other applications for which it is predicted the Roto-Beam will find wide use.

The Unit comes with standard 10 V. AC motor. Also available for DC current, and in other voltages.

Solder

AN IMPROVEMENT in solder packaging is afforded by a "snap-on" metal cover for solder spools, announced by Division Lead Company, 836 W. Kinzie St., Chicago 22, Illinois, manu-

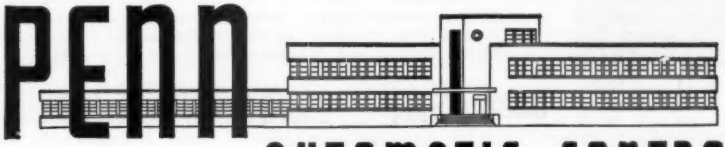
KEEP OUT RUST-SEDIMENT



Switch to PENN Water Valves

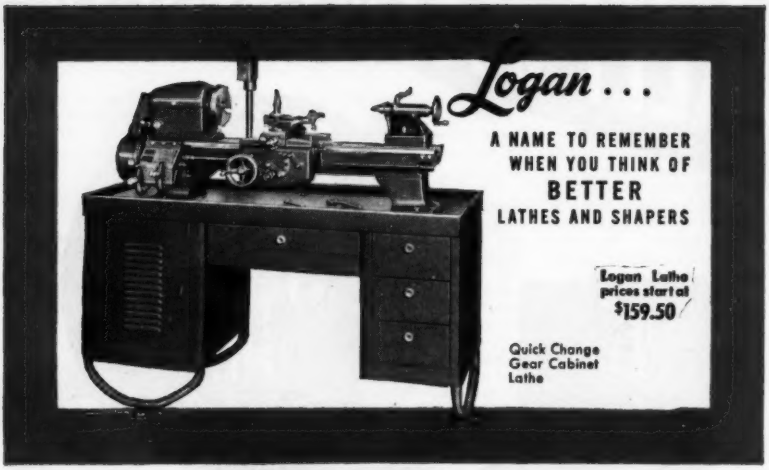
The cross section above shows that water can't come in contact with the range spring and sliding parts. That's the design feature which assures longer service, better performance from Penn water valves. They're protected from corrosion and sediment which cause premature wear and failure. Dependable performance is assured.

Switch to Penn—on your next refrigeration job specify and buy the Penn 246. Built in threaded and flanged styles, in a wide range of sizes. See your wholesaler or write for Bulletin R-1986-B to **Penn Electric Switch Co., Goshen, Ind.** Export Division: 13 East 40th St., New York 16, U.S.A. In Canada: Penn Controls Ltd., Toronto, Ontario.



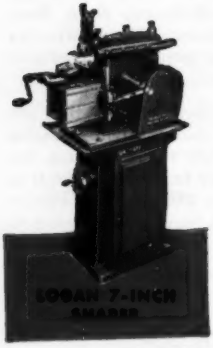
AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS



PRECISION BUILDING GIVES LOGAN LATHES SUSTAINED ACCURACY AND LASTING DEPENDABILITY

V and flat ways of the heavy-ribbed Logan Lathe bed are held to within .0005" of parallelism. The front bearing seat on the Logan Lathe ball bearing mounted spindle can vary no more than .0002". Total spindle runout 12 inches from the bearing is less than .0008". To hold to tolerances like these, one of every seven men building Logan Lathes is an inspector, skilled in the use of the most modern precision instruments. Operations, individual parts, sub-assemblies and completed machines are checked. That is why the Logan Lathe has earned a reputation for sustained accuracy and dependable, low-cost service in all fields of industry. Full information on the complete line of Logan Lathes and Shapers at your Logan dealer's, or on written request.



SPECIFICATIONS COMMON TO ALL LOGAN LATHES . . . swing over bed, 10½" . . . bed length, 43⅛" . . . size of hole through spindle, 25/32" . . . spindle nose diameter and threads per inch, 1½"—8 . . . 12 spindle speeds, 30 to 1450 rpm . . . motor, ½ hp, 1750 rpm . . . ball bearing spindle mounting . . . drum type reversing motor switch and cord . . . precision-ground ways, 2 V-ways and 2 flat ways.

DISTRICT OFFICES: Woolworth Bldg. New York 7, N. Y. CO 7-8024 · 550 W. Washington Blvd. Chicago 6, Illinois Central 1246 · 1672 Mission Street San Francisco, Calif. Underhill 6682 · 700 Commerce St. Dallas 2, Texas Central 4075

S-2-M

LOGAN ENGINEERING CO. CHICAGO 30, ILLINOIS

facturers of lead, solder, and lead alloy products.

This unique metal cover slips over the Divco one pound solder spool and snaps into place. It protects the solder from dents, abrasions, and exposure to the air,

keeping it bright and clean much longer. The metal cover also prevents uncoiling and tangling when the solder is carried in a tool kit.

The three-color lithographed finish adds attention attracting eye-appeal, particularly in dealer displays. The metal cover stands up well in shipping and storage. The protection it affords keeps stock looking new much longer.

Furnished on Divco one pound spools of acid core, rosin core, and solid wire solder in popular sizes and grades.

Ratchet

ANY ½-inch drive socket wrench handle or attachment can be converted into a ratcheting device with a new tool, known as the Ratchetor, announced by the Plomb Tool Company, Los Angeles, Calif. The tool, designated as No. 5447, has a ½-inch square plug with ballcheck for holding a socket wrench, a ½-inch square opening for insertion of a handle or attachment, and a reversible ratcheting mechanism.

The Ratchetor is intended mainly for use with a hinge handle, a hinge handle plus extension, a speed handle or a torque wrench, but it can be used with other non-ratcheting handles.

According to the manufacturer, the Ratchetor is a simple, positive-acting device, huskily built for high torque strength — yet compact for ample clearance. A ball-type thrust bearing and light spring tension result in very

little back drag. The 34 ratchet teeth provide positive engagement every 10½ degrees. The reversing lever acts directly on a pawl, eliminating a separate cam mechanism and the possibility of misalignment and malfunction. This lever is easy to operate, and it is well protected from damage or unintentional reversal.

Sterilamp

A NEW bactericidal lamp that emits more than twice as much ultra-violet radiation as any lamp heretofore available has been developed by the Westinghouse Lamp Division, Bloomfield, N. J. It is a 36-inch long, instant start, Slimline Germicidal Sterilamp that may be operated at three different levels of ultraviolet intensity. The output varies depending upon the current rating of the ballast used with the lamp.

This more efficient Slimline Germicidal Sterilamp will cut the overall cost of ultraviolet protection almost in half, estimated Charles W. Flood, Jr., manager of the Westinghouse Sterilamp department. It not only produces more ultraviolet for each watt of electricity consumed than previous lamps, but also provides an almost uniform level of radiation throughout life, he added.

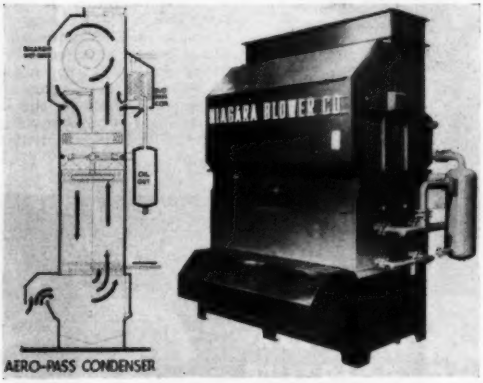
More than five years of research and engineering are back of the Slimline Germicidal Sterilamp development. It represents the most radical change in design since the Sterilamp was introduced by Westinghouse 12 years ago. The best electrical features of all previous ultraviolet lamps have been combined in this lamp, notable of which is the highly efficient, dual electrode that operates cold on instant starting and hot for efficient operation.

The new glass used for the lamp tube has a remarkable resistance to solarization, an opaquing effect that reduced the amount of ultraviolet radiation former lamps were able to emit.

"Thus," Mr. Flood explained, we are able for the first time to provide an almost uniform protection of persons and products at a high level of ultraviolet output throughout life of the lamp. Even at the end of its 6000-hour rated life, or almost a year of normal usage, our tests show that the Slimline Germicidal Sterilamp emits more ultraviolet radiation than other bacteria killing lamps when new. The previous average rated life of similar lamps has been 4000-hours.

Condenser

THE Niagara Blower Company announces an improved design of the Niagara Areopass Condenser to condense refrigerant gases and provide trustworthy control for the year around operation of a refrigerating plant at a standard minimum compressor head pressure, automatically.



AERO-PASS CONDENSER

The condensing is done by passing the gas through two coils located in an air stream. First, the dry, "Duo-Pass" Coil, together with the "Oil-Out," takes out the superheat and condenses and separates oil vapor from the refrigerant. Second, the wet coil condenses the gas at a low temperature. In this coil, thoroughly drenched by a water spray, 1000 Btu. are removed for each pound of water evaporated. The spray water is re-circulated and make-up is needed only for the small evaporation.

The new design affects the head pressure control method. The interior of the casing is partitioned into two parts so that by the operation of dampers, either all fresh air may be used or any degree of recirculation of air. This varies with the condensing load and with changes in air temperature according to the weather, so that the compressors are operated automatically at the desired head pressure, which in practice is the minimum required properly to distribute the refrigerant. In winter, when the heat in the refrigerant gas is not sufficient, an electric heating element in the spray water tank goes into operation automatically to prevent freeze-up. In this new design all dampers are located internally, protected from outside weather conditions, assuring no interruption to automatic operation.

The purpose of the equipment is to remove the difficulties (and danger of inattention) in the manually operated control of compressors and condensers and also to insure the refrigeration plant owner always full capacity of his refrigeration system and to save considerable power cost in compressor operation by keeping head pressures at the minimum under all conditions encountered throughout the year.

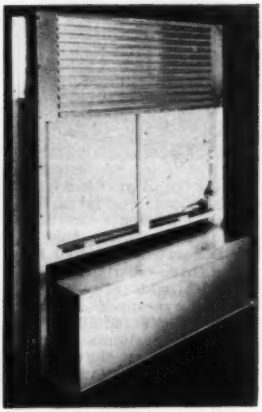
Niagara Aeropass Condensers are manufactured in units ranging from 10 to 100 tons rated capacity.

Truck Unit

A NEW Packaged Truck Refrigeration Unit (patent applied for) that may be installed by the operator himself has recently been announced by the Kold-Hold Manufacturing Company of Lansing, Michigan. According to the manufacturer, this unit makes it possible for the operator to refrigerate his trucks at low cost without complicated installation or operation procedures. Like a domestic refrigerator, the truck refrigeration unit is a complete self-contained refrigeration system.

When installing the refrigeration unit in the truck, it is only necessary to cut two square openings in the floor of the truck; one for the air intake and the other for the discharge. The unit is then placed over the openings and is bolted to the truck floor.

The Truck Refrigeration Unit contains heavy-duty "Hold-Over" Truck Plates which are connected to an air-cooled condensing unit. The cooling cycle is started



by plugging in to any 110 volt electric outlet. Thus, the truck may be charged at any stop or wherever electricity is available. The manufacturer states that this unit will pull down the truck temperature overnight and that the charged "Hold-Over" plate will then maintain the predetermined low temperature of the truck throughout the next day's deliveries.

Being a packaged truck unit, it takes up little space. It keeps truck interiors clean, dry and odorless and provides dependable refrigeration at a cost of a few cents per day. Kold-Hold Refrigeration Plates, such as used in these units, have given satisfactory operation to hundreds of users for over 15 years.

Detailed information is available upon request to the Kold-Hold Manufacturing Company of Lansing, Michigan.

ALABAMA
Birmingham—Auto Service Co.
Mobile—Harris Supply Co.
Montgomery—Nolin-McInnis, Inc.

ARKANSAS
Little Rock—N. O. Nelson
Little Rock—Refr. & Elec. Sup. Co.

ARIZONA
Phoenix—Arizona Refr. Sup., Inc.

CALIFORNIA
Bakersfield—Devlin-Drew Co.
Fresno—Devlin-Drew Co.
Long Beach—Vans Supply
Los Angeles—Ref. Serv., Inc.
Oakland—Calif. Refr. Co.
Sacramento—Hinshaw Sup. Co.
San Diego—Wright Refr. Service.
San Francisco—Calif. Refr. Co.
San Francisco—Cyclops Iron Wks.
San Francisco—Hinshaw Sup. Co.

COLORADO
Denver—McCombs Refr. Sup.
Pueblo—McCombs Refr. Sup.
Pueblo—N. O. Nelson Co.

CONNECTICUT
Hartford—Marsden & Wasserman, Inc.
New Haven—Resco, Inc.
Norwalk—County Supply

DISTRICT OF COLUMBIA
Washington—Melchior, Armstrong & Dessau of Del., Inc.
Washington—Refr. Sup. Co.

FLORIDA
Ft. Lauderdale—Auto Parts & Eqp.
Jacksonville—Bowen Refr. Sup., Inc.
Jacksonville—Refr. Sup. Corp.
Miami—Berner-Pease, Inc.
Miami—Bowen Refr. Sup.
Miami—Graves Refr. Co.
Orlando—R & R Sup. Co.
Tampa—Bowen Refr. Sup. Inc.
Tampa—Graves Bros. Refr. Sup.

GEORGIA
Atlanta—Bowen Refr. Sup., Inc.
Atlanta—Graves Refr.

ILLINOIS
Chicago—Auto. Ht. & Cool Sup. Co.
Chicago—Chase Refr. Sup. Co.
East St. Louis—Illinois Elec. Wks.
Peoria—Polar Sup. Co.
Springfield—U. S. Elec. Co.

INDIANA
Evansville—Budlock Refr. Sup. Co.
Evansville—F. H. Langsenkamp Co.
Fort Wayne—Budlock Refr. Sup. Co.
Fort Wayne—F.H. Langsenkamp Co.
Indianapolis—F.H. Langsenkamp Co.
South Bend—F. H. Langsenkamp Co.
Terre Haute—Budlock Refr. Sup. Co.

IOWA
Cedar Rapids—Thermal Co., Inc.
Davenport—Republic Elec. Co.
Des Moines—Thermal Co.
Des Moines—White Refr. Sup.
Sioux City—Dennis Refr. Sup.

KANSAS
Wichita—Howard Sup. Co.

KENTUCKY
Louisville—Geo. Dehler, Jr. & Co.
Louisville—F. H. Langsenkamp Co.

LOUISIANA
New Orleans—Enochs Sales Co.
New Orleans—Standard Brass & Mfg. Co.
Shreveport—Standard Brass & Mfg. Co.

MAINE
Portland—Ballard Oil & Equip. Co.

MARYLAND
Baltimore—Roche & Hull Appl. Corp.

MASSACHUSETTS
Boston—Melchior, Armstrong & Dessau of Del., Inc.
Boston—Appliance Engr. Corp.

MICHIGAN
Detroit—J. M. Obero, Inc.
Flint—Lilsey Distr. Co.
Saginaw—J. Geo. Fischer & Sons

MINNESOTA
Duluth—Refr. & Indust. Sup.
Minneapolis—Vincent Brass & Copper
St. Paul—Thermal Co., Inc.

MISSISSIPPI
Jackson—N. O. Nelson Co.

MISSOURI
Cape Girardeau—N. O. Nelson Co.
Jefferson City—N. O. Nelson Co.
Joplin—Joplin Sup. Co.
Kansas City—Forslund Pump & Mach.
St. Louis—Brass & Copper Sales Co.
St. Louis—N. O. Nelson Co.
Springfield—Hoffman Sup. Co.

MONTANA
Billings—Refr. Sup. Co.
Great Falls—Thermal Co., Inc.

NEBRASKA
Lincoln—Wickham Sup. Co.
Omaha—Dennis Refr. Sup.
Omaha—Ruegg Refr. Sup.

NEW JERSEY
Newark—Melchior, Armstrong & Dessau of Del., Inc.
Newark—Tesco Distributors.
Ridgefield—Melchior, Armstrong & Dessau of Del., Inc.

NEW MEXICO
Albuquerque—Refr. Parts & Sup.

NEW YORK
Binghamton—W. A. Case & Son Mfg.
Brooklyn—The Capson Co.
Brooklyn—Melchior, Armstrong & Dessau of Del., Inc.
Buffalo—Root, Neal & Co.
New York City—Aetna Sup. Co.
New York City—Melchior, Armstrong & Dessau of Del., Inc.
New York City—Paramount Elec. Sup.
Rochester—Ontario Metal Sup. Co.
Schenectady—Murray Sup. Co.
Syracuse—Central Serv. Sup. Co.
Syracuse—Melchior, Armstrong & Dessau of Del., Inc.
White Plains—County Seat Sup. Co.

NORTH CAROLINA
Charlotte—Bowen Refr. Sup.
Charlotte—Henry V. Dick & Co.
Greensboro—Hasco, Inc.
Raleigh—Henry V. Dick & Co.
Raleigh—Noland Co., Inc.
Wilmington—S.R.S. Distributors

OHIO
Akron—Akron Refr. Sup.
Cincinnati—Radio & Refr. Sup.
Cleveland—Refr. Sup.
Columbus—Mason Sup. Co.
Dayton—Allied Sup. Co.
Lima—Allied Sup. Co.
Toledo—Heat & Power Eng. Co.
Youngstown—Refr. Sup.

OKLAHOMA
Oklahoma City—Macklanburg Sup. Co., Inc.
Tulsa—Machine Tool & Sup. Co.

OREGON
Portland—Peerless Pacific Co.

PENNSYLVANIA
Allentown—Larson Sup. Co.
Harrisburg—Refr. Sup. Co.
Philadelphia—Melchior, Armstrong & Dessau of Del., Inc.
Philadelphia—Victor Sales & Sup. Co.
Pittsburgh—Jos. Woodwell Co.
Reading—Larson Sup. Co.
Scranton—Central Serv. Sup. Co.

RHODE ISLAND
Providence—R. I. Refr. Sup. Co.

SOUTH CAROLINA
Charleston—Roberts Refr. Sup.
Columbia—Henry V. Dick & Co.
Columbia—Noland Co., Inc.
Greenville—Texwood Mfg. Sales Co.
Spartanburg—Noland Co., Inc.

TENNESSEE—
Chattanoga—Noland Co., Inc.
Chattanooga—Peglar Mach. Co.
Knoxville—Leinart Eng. Co.
Memphis—N. O. Nelson Co.
Memphis—United Refr. Sup. Co.
Nashville—J. B. Thomas Co.
Nashville—Starr Co.

TEXAS
Abilene—Refr. Sup. & Elec.
Austin—N. O. Nelson Co.
Beaumont—N. O. Nelson Co.
Beaumont—Standard Brass Mfg. Co
Corpus Christi—United Refr. Co.
Dallas—Electromotive Corp.
Dallas—N. O. Nelson Co.
El Paso—Hays Elec. Serv.
Fort Worth—Texas Refr. Sup. Co.
Houston—N. O. Nelson Co.
Houston—Standard Brass Mfg. Co.
Lubbock—Texas Ref'n Sup. Co., Inc
San Antonio—Westbrook Carb. & Elec.
San Antonio—United Refr. Co.
Waco—N. O. Nelson Co.
Wichita Falls—N. O. Nelson Co.

UTAH
Salt Lake City—Flint Distr. Co.
Salt Lake City—N. O. Nelson Co.

VIRGINIA
Newport News—Noland Co., Inc.
Norfolk—Noland Co., Inc.
Richmond—Refr. Sup. Co.
Roanoke—Southern Refr. Corp.

WASHINGTON
Seattle—Refr. Wholesalers, Inc.
Spokane—E. S. Matthews, Inc.

WEST VIRGINIA
Charleston—Refr. & Appl. Pts. Co.

WISCONSIN
Milwaukee—Thermal Co., Inc.

HAWAII
Honolulu—Refr. Serv. & Sup. Co.

WHERE TO GET GENUINE UCD PARTS

UNIVERSAL COOLER

AUTOMATIC REFRIGERATION SINCE 1923 · UNIVERSAL COOLER · 1922–1948 · 26 YEARS OF PROGRESS

DIVISION INTERNATIONAL DETROLA CORPORATION

MARION, OHIO • BRANTFORD, ONTARIO

Copeland

DEPENDABLE *Electric* REFRIGERATION

Gets the Ring

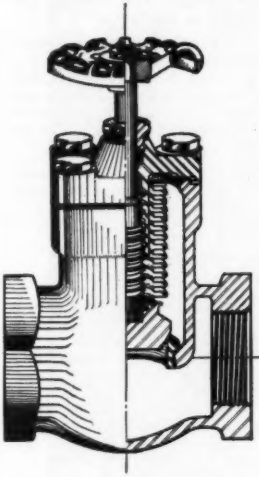
Say "Copeland" to a refrigeration unit prospect, and it's like mentioning a class automobile to a car owner. Copeland stands for effective, trouble-free performance under all conditions. That's why it's easy for you to get in with your story, out with the order. Your market is already lined up — all around the town. The Copeland line means more signing on the dotted line.

Manufacturers of: Refrigeration Units (open-type and Copelametic), Water Coolers, Refrigerators.

COPELAND REFRIGERATION CORPORATION, SIDNEY, OHIO

Packless Valve

A NEW type of packless valve which eliminates the costly maintenance required with stuffing boxes and other means of preventing leakage, is announced by



Fulton Sylphon Division of Robertshaw-Fulton Controls Co., Knoxville, Tenn.

This new valve, termed the "No. 3000 series," owes its freedom from maintenance to the seamless metal Sylphon Bellows which forms a leakless connection between the valve disc and the valve body. This construction enables repeated opening and closing of the valve and no maintenance is required to keep the stem absolutely tight against leakage, even under extreme conditions of pressure or vacuum.

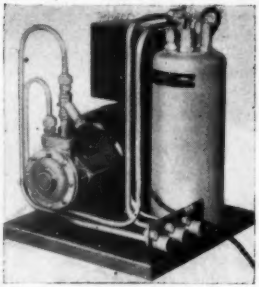
They are available equipped with stainless steel bellows and stainless steel bodies which adapt them for economical service in applications which would be impractical or impossible with conventional valves due to corrosive and other metal-wearing actions which are responsible for extremely high maintenance costs. The bodies of the new valves are also available in bronze, cast iron, cast steel or monel metal, thus adapting them to almost any valving need. The Sylphon bellows is available in either stainless steel or monel. These bellows are available in a variety of other metals including phosphor bronze and brass.

The valves are made in sizes ¼-inch up to three inches with screwed, welded or flanged ends.

Carbonator

AN INSTANTANEOUS carbonator, mounted on a 12½ inch square metal base, complete with check valves, pressure relief valve, pump, motor and relay assembly, and ready for immediate installation, is now being manufactured by Temprite Products Corporation, 45 Piquette Avenue, Detroit 2, Michigan.

This self-contained assembly was designed for use in soda fountains and taverns, coin operated beverage dispensing machines and manually operated beverage dispensing units. City water



and CO_2 gas are transformed into a highly carbonated water which can be cooled to the desired temperature with existing mechanical soda coolers, cold water baths or cracked ice cooling systems.

Under normal operating conditions, the Temprite is capable of delivering up to 5620 glasses of carbonated water from a single tank of CO_2 gas. This is equivalent to 281 glasses per pound of CO_2 gas used. The carbonator operates independently of city water pressure and without loss of CO_2 gas through vents or purging devices. The completely automatic pump forces water into the shell at a pressure higher than the CO_2 gas pressure. Flow of water into the carbonator is thereby assured regardless of supply pressure and without loss of CO_2 gas.

The Temprite Carbonator is also available enclosed in a metal cabinet for use wherein the unit may be installed in an unprotected area.

Also available is a combination cooler-carbonator for applications without existing water cooling equipment.

Goggles

THE new Cesco Spec-Lite Goggle is of entirely new design. It is reported that its use results in extra advantages to all companies concerned with the safety of their employes. A new-type forehead rest, plus balanced

temple suspension practically floats the Spec-Lite in position. Workers say they are scarcely aware of wearing it. Actually the weight of the goggle is only 1 oz., but reports indicate it feels even less because of its special design.

In reality the Spec-Lite is more than a spectacle-type goggle. Exceptional coverage up and down and laterally protects the entire eye area from sparks, light impacts, liquid splashes and other hazards.

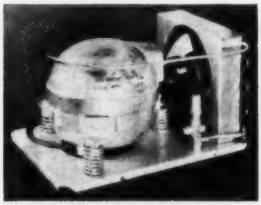
The new Spec-Lite also features quick adjustability for correct fit on various faces. The sturdy one-piece plastic lens is quickly and easily replaceable, and has distortion-free visibility. Long-wear is attributed to the goggle's durable frame and its quality construction.

The Spec-Lite's new design

also permits comfortable wear over personal glasses. It is available with either clear or glare-reducing green plastic lenses.

Sealed Unit

AIRDRAULICS Engineering, Inc., New Canaan, Conn., has recently developed a series of compact, light weight, high capacity condensing units. These are made in the one-eighth, one-sixth, and one-fifth horsepower sizes and are both gravity and fan cooled.



These units were especially designed for use in refrigerators, freezers, bottle coolers, and water coolers.

The one-eighth horse-power condensing unit weighs but 33 pounds and measures 16" long, 12" wide, and 8¾" high.

The simplicity of design, high quality of material and the close tolerances held in manufacture assure long, useful service. Each of the compressors features an all-aluminum housing.

Plier Wrench

A NEW plier wrench is now in the Bonney line of tools. They are made in two sizes, 7" and 10", are very fast

in adjustment and easy to use.

The scientific design of this plier wrench results in the bottom jaw becoming a hinged fulcrum which permits a firm solid grip without slippage on irregular shaped objects. If so desired, the jaws can be made to grip at the ends only.

Autotransformers

A NEW LINE of autotransformers designed to adapt standard 115-volt, 60-cycle hermetic refrigerator motors for use in 50-cycle and odd voltage applications has been announced by the Specialty Transformer and Ballast Divisions of the General Electric Company. The new units provide dependable motor operation under both starting and running conditions.

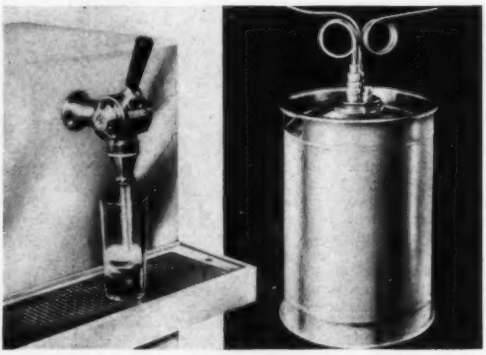
The new line of autotransformers has been engineered to meet the varied requirements of the refrigerator export market based on a study of industry requirements. It was found that two standard .350-kva units, differing only in voltage ratios and taps, are adequate to meet the requirements of virtually all of the world's domestic-type refrigerator markets.

Two other units are available in .550-kva ratings for commercial refrigerators. These few standard units are taking the place of hundreds of designs formerly built to supply the same markets.

The new autotransformers are now in production and available for delivery.

Dispenser

THE Wooster Brass Company announces a new beverage dispensing unit to be sold under the name "Trumpet Select-Flo Systems." This new bar and soda fountain equipment provides two-way service from the same draft arm.

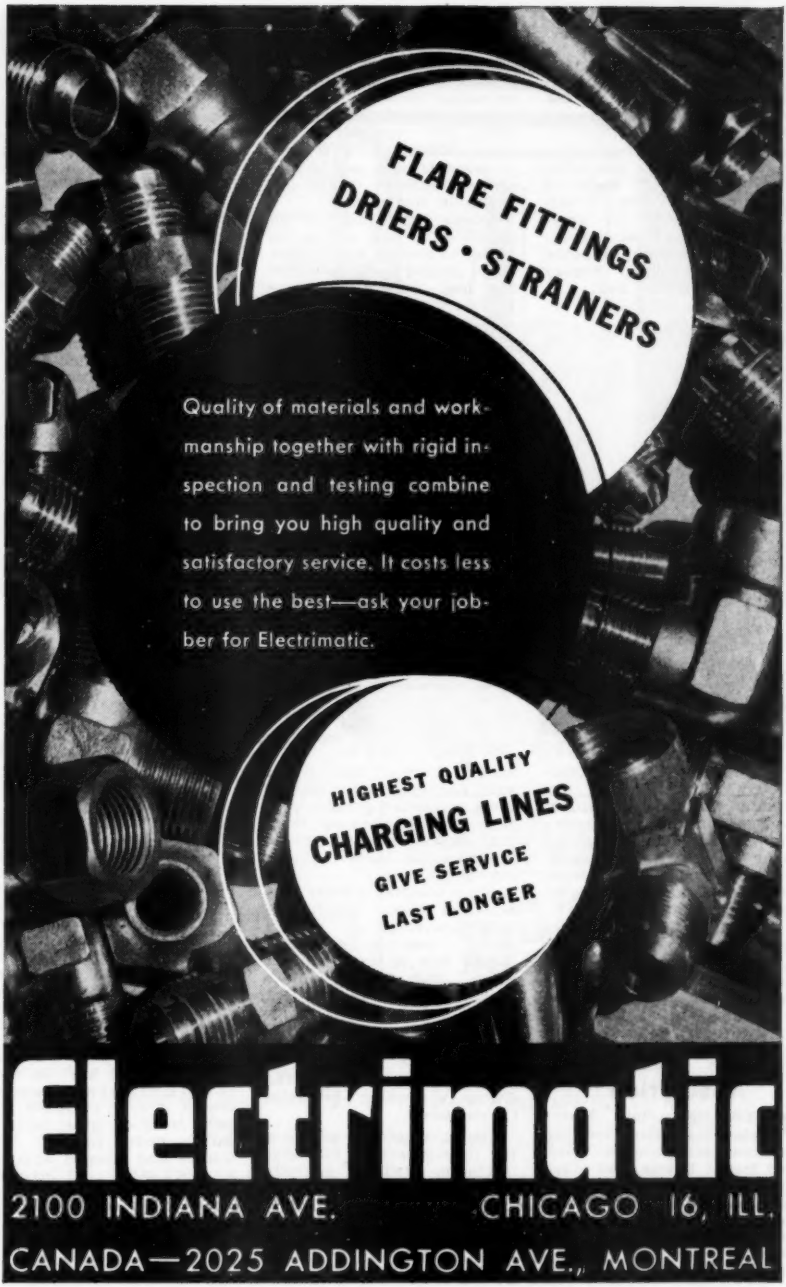


One open position draws a perfectly mixed carbonated beverage. The other open position provides only clear sparkling soda water.

Select-Flo is available as a complete self-contained unit in a modern, stainless steel cabinet, or it can be provided for installation right in existing bars and soda fountains.

Basic operating unit consists of a 5-gallon, high pressure, stainless steel syrup tank, connecting lines, fittings and draft arm. Mixing head in the draft arm accurately controls the proportion of syrup and soda water for carbonated beverages. Draft arms can be installed in any number of locations on bar or counter. These are available in three standard styles; goose-neck, straight arm and under-the-bar models.

Select-Flo was designed and developed to speed service, save counter and storage space and to reduce the amount of work required to serve customers. Other advantages include better proportioned drinks, improved sanitary conditions and lower per-unit-of-sale cost.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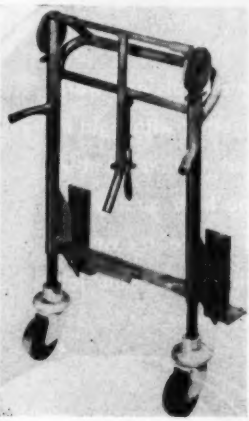
Liftrux

PERFECOLD of Los Angeles, has developed a new low-cost equipment handling apparatus especially for the refrigeration industry, known as the Perfecold Liftruk.

Designed by refrigeration engineers to meet refrigeration equipment handling problems, the Perfecold Liftruk introduces an easy, trouble-free method of moving bulky cargo in shipping rooms, warehouses, display rooms, and in the field.



The Perfecold Liftruk completely eliminates the hydraulic principle of lifting, and permits the rapid movement of cargo in and out of tight places without adjusting the loads. The Liftruk needs no fluids, no recharging, and no maintenance.

Consisting of two trucks weighing 48 pounds each, the Liftruk set has a recommended capacity of 2500 pounds, and is designed so that one man can move capacity loads on level surfaces. Two men can handle capacity loads on inclines.

With the Liftruk, cargo can be moved forward, sideways, turned around, and pivoted, even on varying surface levels. The apparatus is highly portable, and can be carried on delivery trucks, and stored in small space.

Among the features of the Perfecold Liftruk are its low center of gravity which minimizes tipping and cuts breakage loss; double-lift action which lifts at two points with one lever arm; padded cross supports for cargo protection; blade hook for extra lift; adjustable nose plates to accommodate loads of varying dimensions.

Other features include rubber-tired wheels which prevent marring of display floors; positive operating handle lock to insure utmost safety; and lifting handles designed to guide and lift cargo over varying floor levels.

Insulation

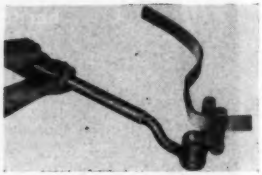
A NEW lightweight Fiberglas insulation for use in home refrigerators, truck and trailer bodies, and other low-temperature equipment is now being marketed by the Building Materials Division of the Armstrong Cork Company. The new material, called XB-PF Fiberglas, will be manufactured by the Owens - Corning Fiberglas Corporation.

XB-PF Fiberglas, which is the lightest-weight Fiberglas insulation available, is resilient, odorless, non-corrosive, fireproof, sterile, and chemically stable. It will be available in standard rolls 54" wide, in ½" and 1" thicknesses. The ½" thickness is furnished in 50 foot long rolls, and the 1" thickness in 25 foot long rolls.

XB-PF Fiberglas insulation is available in two densities: ½ pound per cubic foot and 1 pound per cubic foot. The thermal conductivity of the ½ pound material is .25 Btu. per square foot per hour per inch thickness at a mean temperature of 75F. The thermal conductivity of the 1 pound density under the same conditions is .22 Btu.

Bending Bar

ADJUSTABLE arms distinguish a patented bending bar, introduced by the Plomb Tool Company, Los Angeles 54, Calif. This new tool, designated No. 2135, eliminates the need for the usual assortment of solid bending bars, and it handles many jobs that would otherwise require a sledge hammer, pry bar, vise or press. It saves hours of time, according to the manufacturer, as well as barked shins, broken fingers and lost tempers.



The two adjustable arms can be placed close together or far apart, and they can be positioned on the hexagon post so the handle will project at the desired angle. Actually, more than 100 different positions of the arms are possible for bending, straightening, aligning, spreading and forming various parts and materials. Ample leverage may be obtained with the 36-inch handle.

Automotive shop uses for this bending bar include straightening brackets, braces, frame members, tie rods, steering arms, bumper parts, body pillars, door frames and hinges; aligning wheels, axles and exhaust pipes; removing spring clips and sprung shafting, and spreading braces, brackets and springs. It is a useful auxiliary lifting and aligning device for heavy assemblies.

Did you say—No Refrigeration on a Meter-Miser

Are you prepared to give prompt and efficient service when the original refrigerant has leaked out? More and more service men are finding HERVEEN measures up to their expectation for performance in Meter-Misers. Customer satisfaction has also been proven when HERVEEN replaces the original charge.

HERVEEN

the IDEAL REPLACEMENT REFRIGERANT

Who'll take this call?

Don't pass up these calls because you haven't the original refrigerant. Send for bulletin on "Procedure for Recharging Meter-Misers with HERVEEN."

For deliveries, see your local jobber or write to

Conservative Gas Corporation, **Modern Gas Division**

MANUFACTURERS AND REFINERS

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Tool Kit

A NEW all-purpose tool kit, which facilitates the installation and repair of many air conditioning and refrigeration jobs has just been announced by Ingersoll-Rand Company.

The kit is compact, portable, and permits the service man to use the same tool for a multitude of jobs—simply by using the proper accessory. It includes the new electric impact tool and standard accessories. With this kit the mechanic may easily and quickly perform the following jobs: nut-running and nut-removal, drill steel, masonry and wood, ream, apply and remove studs, tap, drive and remove screws, extract broken cap screws and studs, do hole saw and wire brush work. The impact tool weighs only 6½ pounds. Because of its exceptional power and light weight, it saves as much as 90% time on virtually all service jobs.

The kit is assembled complete or with accessories as required. With standard equipment, the kit contains the impact tool with a Jacobs collet type chuck, six hex sockets of varying sizes, a Morse Taper socket, and

adapter sleeve. If some items are already available, price allowance is made on those omitted.

The photograph shows a completely outfitted kit containing all standard equipment plus twist drills, reamers, taps, carbide-tipped masonry drills, hole saws, screw and stud extractors, wood bits, wire brushes — all in sizes specified. The kit also contains screw drivers and quick change chuck, square Phillips and Reed and Prince bits, together with screw driver adapter for these bits. A universal joint and anvil extensions are available.

The impact tool is the only Universal motor driven, all-purpose tool employing the impact mechanism. It plugs into any AC-DC electric socket and runs as any conventional electric tool till the going gets tough. Then the impact mechanism automatically functions and delivers 1900 rotary impacts per minute to the job. This rotary power is essential to perform difficult jobs, without torque effect to the operator. Because of the ease and speed with which the work can be handled, it enables the operator to do any job faster and with less effort. There is no kick, no twist transmitted back to the hand under any condition, and the motor continues to run even when the spindle is stalled. This eliminates motor burn-outs which are a frequent cause of electric tool failure.

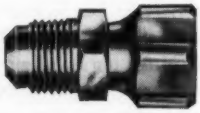
The impact tool is available with either 110V or 220V motors as required.

Soda Fountain

DEVELOPMENT of a new, all-sanitary bob-tail, the first which completely meets all New York City Department of Health specifications, the accepted standard, has been announced by the Ace Soda Fountain Manufacturing Co., Inc., an affiliate of the Ace Cabinet Corp.

Quick Coupler

TIGHT connection of valves, evaporators, condensers or gage sets with gage, pressure or vacuum lines is effected by Electri-



matic Quick Coupler without the use of tools. Finger-grip surface allows firm grasp, and slight turn makes connection. Coupler is available in SAE flare sizes ranging from ¼-inch male x ¼-inch female to ⅝-inch male x ⅝-inch female. Manufactured by Electrimatic Division, The Simoniz Company, 123 E. 21st St., Chicago 16, Illinois.

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SELF ALIGNING VALVE GRINDING KIT

Now you can easily grind, finish and test recessed or flush valve seats (either piston or flapper jobs) . . . get 'em back into action *faster* . . . and make satisfied customers! No more tiresome hand-lapping.

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The Army and Navy, Refrigeration Trade Schools, Public Schools and Service Organizations in United States, Canada, England, South Africa, Cuba, Hawaii and many other countries.

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Two 6" Lapping Blocks in Hinged felt lined wood box for safe keeping.

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A new type of liquid indicator

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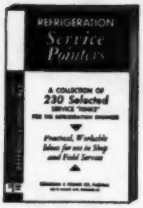
The REFRIGERATION SERVICE ENGINEERS REFERENCE MANUALS

REFRIGERATION Service Pointers



How many times have you wanted an idea that you could use—to test equipment—something you could build in your own shop; or special shop equipment that would expedite your overhauling and rebuilding work; or special tools to save you time. Here for the first time in handy book form, is a collection of over 230 practical, workable refrigeration service pointers.

The "pointers" represent the combined practical experience of hundreds of servicemen—men who "know how" and who have worked out their problems in a practical "down-to-earth" manner. **The only book of its kind.**

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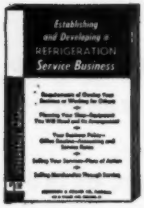
Establishing and Developing a REFRIGERATION Service Business



Whether you are starting a service business—or expanding your present refrigeration business—you need this new book because it provides factual information, based on actual experiences of those who have worked out successful plans in developing their own businesses.

There are numerous conditions to take into consideration when you start your own business or plan on expanding your present business. It is the purpose of this book to guide you in formulating a constructive program.

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6" x 9"
106 pages

Servicing HERMETICALLY SEALED UNITS

Servicing Hermetics is published in answer to many requests from the field and is intended to provide a description of the operation, construction and field service on hermetically sealed units. While the book does not serve as a shop manual or provide specific instructions on rebuilding, it brings you the most complete "trouble-shooting" information on hermetics.

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NEWS OF THE EQUIPMENT INDUSTRY

REMA PRODUCT GROUPS PLAN ACTION

A MILK Cooler Products Section of the Refrigeration Equipment Manufacturers Association was formed recently at a special meeting in Pittsburgh, Pa.

This special product section was organized because of the need in the industry for concerted action in establishing practical rating standards for mechanically refrigerated milk coolers about which there has been a lack of standards and because it was felt that many benefits would result in constructive trade association activity.

J. Kingsley Noel, Jr., of the Victor Products Corporation, Hagerstown, Md., was elected Chairman and J. E. Wilson, Jr., of the Wilson Cabinet Company, Smyrna, Del., was elected Secretary of the Group.

A Statistical Committee composed of J. E. Wilson, Jr., The Wilson Cabinet Company, J. B. Baughman, Westinghouse Electric & Mfg. Co., and E. G. South of Frigidaire was appointed to make a study of sales within the industry and to develop methods and forms for a monthly report to all members of the Milk Cooler Section of R.E.M.A.

Jack Smith of Frigidaire was also appointed as Temporary Chairman of a special Ratings Committee to compile available rating data from all members for discussion at the next meeting.

In commenting on the meeting, J. Kingsley Noel, Jr., Chairman of the Milk Cooler Section of R.E.M.A. said "We feel that there has been entirely too much latitude in the various types of ratings now used for milk cooler operation and that by making a joint study of the situation we can accomplish much in the way of establishing a standard rating basis for the entire industry. We also know that proper sales statistics and market analysis will be a great aid."

Membership in the Milk Cooler Section of R.E.M.A. will consist of representatives of manufacturers who produce mechanically refrigerated cabinet-type milk coolers for cooling or of storage of milk or cream in standard 5, 8 and 10-gallon cans. The section is not intended to cover walk-in rooms and tubular or plate type coolers.

The Home & Farm Freezer Products Section of R.E.M.A. girded its loins for a very complete program of activities during the coming year at its annual meeting in Pittsburgh, Pa.

Howard R. Roberts of the Whiting Corporation, Harvey, Ill., and George Kingston, Kelvinator Division of Nash-Kelvinator Corporation were unanimously elected Chairman and Secretary, respectively, for the group.

Word from the twenty companies now members of the R.E.M.A. group indicated a real interest in an active program.

A committee consisting of J. E. Wilson, Jr., Wilson Cabinet Co., Inc., Smyrna, Del.; J. Kingsley Noel, Jr., Victor Products Corp., Hagerstown, Md., and Edward South, Frigidaire Division, G.M.C., Dayton, Ohio, was appointed to draft a suggested form and make recommendations for a monthly report of sales statistics at the next meeting. Methods of market analysis as well as methods of distribution will be given an important place on the program.

Consideration is also given to a system of standard application ratings which will be acted upon at the next meeting.

A publicity committee composed of J. W. Krall, Tyler Fixture Corp., Niles, Mich.; H. R. Roberts and J. Kingsley Noel, Jr., was appointed to work out a plan for bringing the many advantages of home and farm freezers to the attention of home owners, farmers and women's groups through releases to newspapers, magazines and other publications.

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A.C. Motor Starting

● **Capacitrons** are produced under a strict quality control system which assures efficient, long-life service from every unit. Each Capacitron is built to the highest electrical and mechanical standards. From production of the dielectric coating on etched aluminum foil to the rugged, hermetically sealed metal cases, there exists a uniformity of characteristics which assures uniformity and trouble-free performance. This maintenance of durable quality is a *good* reason why you can always "Depend on **Capacitrons!**"

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CAPACITRON *Division*
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Gentlemen: Please send Bulletin 16-1 which gives complete details on Capacitron Motor Starting Capacitors.

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SERVEL SERVICE SCHOOLS

A SERIES of service schools aimed at providing distributor and manufacturer outlets with complete information on Servel Supermetic condensing units has been recently inaugurated by Servel, Inc., Electric Refrigeration Division.

First of the meetings have been held during recent weeks in Southern areas, and during the next two months others have been scheduled to cover Midwestern, Northern, and Eastern sections of the country, according to George S. Eager, Service Manager of the Electric Refrigeration Division. Service personnel of allied fixture manufacturers, as well as Servel distributor and dealer representatives, are being invited to attend the sessions.

Included in the training programs are performance demonstrations, discussions of internal construction of the unit, electrical characteristics, and how to select and apply the condensing unit for the most satisfactory operation. The importance of the serviceman's ability to stimulate customer confidence and thus better his own position and maintain acceptance of the product is also emphasized.

Participating in the meetings are T. E. Parr, Servel field service supervisor; J. A. "Jim" Madden and Frank Jaeger, field service engineers, assisted by the district managers in each territory.

★ ★ ★

EBCO STARTS PROMOTIONAL AND ADVERTISING CAMPAIGN

THE Kelvinator-refrigerated line of electric drinking water coolers is to be the subject of an intensive promotion and advertising program for 1948. These coolers are manufactured by The Ebco Manufacturing Company, Columbus, Ohio, pioneers in the water cooler industry.

A. R. Benua, President of the Ebco Manufacturing Company, said the program will seek to increase cooler sales by emphasizing the need for more and better drinking water in offices, homes, groceries, factories, theaters, and all other places where people gather. Mr. Benua pointed out that the Kelvinator-refrigerated line of drinking water coolers is one sure way of bringing properly cooled, pure water to people in a way that is both palatable and sanitary.

The $150,000 promotional program will combine advertising in publications of general, trade, and specialized fields, and extensive public relations activities. The preparation and placing of advertising will be under the direction of Wheeler, Kight, and Gainey, Inc., of Columbus, Ohio. Public relations activities will be directed by Theodore R. Sills & Company of Chicago and New York.

A cooperative $25,000 "treasure hunt" by the company and its nationwide corps of distributors' salesmen of both Oasis and Kelvinator-refrigerated Electric Drinking Water Coolers has been launched as part of the company's sales program.

The "treasure hunt," which assures valuable merchandise prizes to all salesmen who really hustle, began Feb. 16, and will continue through May 29. Prizes will be merchandise of the salesmen's own choosing, awarded upon a point basis for sales of electric drinking water coolers.

A. R. Benua said the firm expects to distribute approximately $25,000 in merchandise prizes to distributors' salesmen during the three-month "treasure hunt."

★ ★ ★

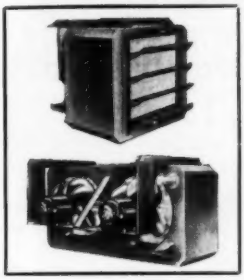
G-E INDUCTION MOTORS

BECAUSE current production of G-E single-phase, integral-hp motors—one to 7½ hp—has been increased five times that of prewar level, these motors are now largely available for immediate delivery in the ratings principally demanded, according to W. H. Henry, manager of General Electric's small and medium motor divisions. Where a particular rating is not in stock, shipment can be made in a few weeks.

These motors are widely used on farms and in homes and small manufacturing plants where only single-phase power is available. They are simply constructed and hence easily maintained. In addition, their operating characteristics from the standpoint of torque, efficiency, and power factor make them readily adaptable for use in food freezers, farm machinery, air-conditioning equipment, and for similar applications.

HOWE REFRIGERATION KNOWN THE WORLD OVER

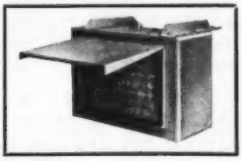
HOWE-CONDITIONAIRE UNIT COOLERS



Ceiling type, for all commercial purposes, these Howe-Conditionaire unit coolers have all-steel welded hot galvanized fin coil suitable for all refrigerants. Coil has permanent 100% fin contact. Heavy gauge steel, sweat-proof, corrosion-free housing; four adjustable deflectors to insure uniform air circulation; generous size motors for long life. Correct design insures high humidity for storage of fresh food products.

HOWE-CONDITIONAIRE Rapid Freeze Cooler

Designed for that low temperature job . . . for continuous heavy duty loads. Cork insulated housings make possible defrosting without rise in room temperature. Use Howe-Conditionaires for efficiency...permanency...safety.

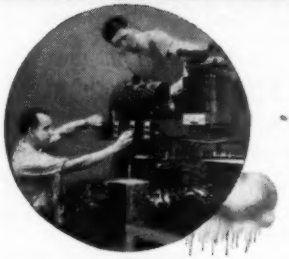


HOWE ICE MACHINE CO.

2825 Montrose Ave., Chicago 18, Illinois • Distributors in Principal Cities

EXCLUSIVE REFRIGERATION EQUIPMENT BUILDERS SINCE 1912

PRACTICAL TECHNICAL TRAINING
In REFRIGERATION, HEATING, AIR CONDITIONING



More than 35,000 former students in industries the world over received practical technical training at this Technical Institute since 1903.

Courses From 6 Months to 2 Years

Our students receive specialized training to fit them for substantial careers in industry. Practical technical courses prepare them as *Refrigeration Servicemen in 6 months; Refrigeration and Heating Servicemen in 12 months; Refrigeration, Heating and Air-Conditioning Technicians in 2 years.* Classes begin in January, April, July, September. Write for free "PHOTO STORY". Its 49 action photos tell the story of the practical training students receive to help fit them for responsible positions.

MILWAUKEE SCHOOL of ENGINEERING
A Technical Institute

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Without cost or obligation, send me your new 44-page "PHOTO STORY."
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Mr. Henry also announced that three-phase open motors up to 75 hp are being shipped either from stock or on a normal prewar shipment cycle, and that enclosed, non-ventilated motors are also in an "almost stock" position. Production of totally-enclosed, fan-cooled motors, Mr. Henry said, is expanding rapidly to the point where these motors will soon be on stock or normal shipment basis.

"Since the three-phase open induction motor is really the 'bread and butter' motor for almost all industry," Mr. Henry said, "we regard our increased production as a definite contribution to the industry-wide effort to accelerate production to meet current demand and at the same time help reduce the inflationary trend."

★ ★ ★

MILLS TO HANDLE PUBLIC RELATIONS FOR REMA

FOLLOWING closely on the heels of the recent All-Industry Refrigeration and Air Conditioning Exposition comes announcement of the appointment of George E. Mills, of Cleveland, Ohio, as Public Relations Director of the Refrigeration Equipment Manufacturers Association.

GEORGE E. MILLS

Mills, a native of Cleveland, is a veteran advertising, sales promotion and publicity man with a broad background. He will combine publicity and sales promotion activities for the refrigeration and air conditioning industry with a public relations program designed to result in a more closely knit relation of the various segments of the vast refrigeration and air conditioning industry as represented in the Refrigeration Equipment Manufacturers Association.

Foremost in the activities will be four regional educational meetings and conferences being sponsored jointly by R.E.M.A. and the Refrigeration Service Engineers Society.

Meetings of the many product groups of the refrigeration industry represented in R.E.M.A., each of which carries on its own special program, will also receive close personal attention.

★ ★ ★

REMCO APPOINTS CHIDESTER

CHARLES W. CHIDESTER will represent Remco, Inc., in the states of California, Nevada and Arizona, it was announced recently by K. M. Newcum, president of the company. Mr. Chidester will have temporary headquarters at 1251 West 41 Place, Los Angeles 37, Calif., until permanent space has been acquired.

C. W. CHIDESTER

He has been with the refrigeration industry for approximately 14 years, having spent that tim ewith the Pacific Scientific Co. For the last six years he was manager of the refrigeration and air conditioning division of their Los Angeles office. He is chairman of the Los Angeles Section of the American Society of Refrigerating Engineers, and a member of the Southern California Chapter of the American Society of Heating and Ventilating Engineers.

★ ★ ★

NEW BOARD MEMBER FOR ULTRA-VIOLET PRODUCTS

RECENT appointment of George W. Robbins to the Board of Directors of Ultra-Violet Products, Inc., of Los Angeles, has been announced by Thomas S. Warren, president.

Mr. Robbins is Associate Professor of Marketing at U.C.L.A. He is a graduate of that school and also the Harvard School of Business Administration. Previous to his present position, Mr. Robbins instructed at the University of Oregon.

Other members of the Board of Directors include James A. Blaisdell, Collis H. Holliday, J. Leslie Goodson, I. R. Pfister, Henry Warren and Thomas S. Warren.

FREEZER SENTRY

A PROFITABLE "Push Over" SALE ON EVERY FREEZER SERVICE CALL

● Every owner of a home freezer needs this signaling device to insure quick warning of mechanical failures. Every day more freezers are being serviced in your area. You do the servicing. You know the owners. They need the Freezer Sentry.

Here is Why You Should Sell the Freezer Sentry

A package item. Installed in two minutes.

●

Positive action. No thermostat. A drop of mercury makes the contact.

●

Battery operated. Trickle charger insures 5-year battery life and 100 hours buzzer operation.

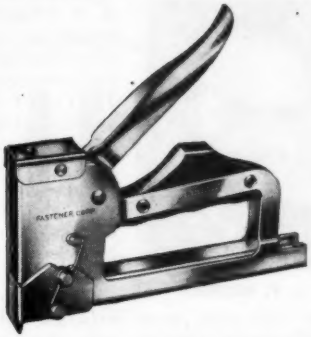
●

An extra good profit margin for you.

Immediate delivery. Write today for descriptive material and price sheet.

JEWETT ASSOCIATES
1053 MAIN ST. BUFFALO 8, N. Y.

REACHES OVER AND IN
Tacks Fast And Sure



IT'S THE NEW DUO-FAST GASKET TACKER with the Extended Lip

- For tacking hard rubber gaskets and tacking over beadings.
- One hand operates tacker with speed and accuracy—the other hand is free to hold work.
- Uses medium gauge, heavy gauge or narrow crown staples.
- Drives staples up to 3/8" in length.

EQUIPPED WITH THE NEW Jiffy Jaw

The DUO-FAST Jiffy Jaw is something special—it takes just a second to relieve a jammed condition—Click it's off—Click it's on—no delay and on with your production.

Call Your DUO-FAST Specialist

Your DUO-FAST Specialist is a good man to know—he may have ideas to speed up your production and cut your costs—Write for the name of the man in your territory.

FASTENER CORPORATION
846 Fletcher St. Chicago, Illinois

LYNCH APPOINTS PETERSEN

R. L. SEARS, Director of Sales, Par Compressor Division, Lynch Corporation, Toledo, Ohio, announces the appointment of A. V. (Pete) Petersen as district sales manager of the southeastern district with headquarters at Atlanta, Georgia. Mr. Petersen spent the last year and a half as assistant to Mr. Sears in the Toledo offices.

A. V. PETERSEN

Cal Pierce, who was formerly sales manager of the southeastern district, has been transferred to the west coast as district sales manager, with headquarters at San Francisco.

Both Mr. Petersen and Mr. Pierce will have charge of all sales and services of Par Condensing Units in their respective territories.

★ ★ ★

BETZ ANNOUNCES NEW FACTORY REPRESENTATIVE

BETZ CORPORATION, manufacturer of Filterpure low-side equipment, announces the appointment of The Gullatt Company, Atlanta, Georgia, as direct representative for the entire Southeastern section of the United States.

According to Lyman B. Betz, president of the Betz Corporation, the Gullatt Company is a well established sales organization having its own warehouse facilities, and fully equipped to render fast delivery on all orders. The firm is headed by Henry W. Gullatt, who is widely acquainted throughout the refrigeration field. John Blumhardt, one of the members of the Gullatt executive staff, has been placed in direct charge of Filterpure sales.

Appointments of wholesale distributors to handle the Betz line are now being made for the Gullatt territory. Complete stocks are on hand in the company's warehouse, and all deliveries to wholesalers will be made from this point.

HOLLADAY APPOINTED SALES MANAGER BY DU PONT

L. P. HOLLADAY III has been appointed manager of sales development in the Chlorine Products Division of the Du Pont Company's Electrochemicals Department.

Mr. Holladay, who started with the company in 1934 as a chemist in the analytical laboratory of the Philadelphia plant of the Grasselli Chemicals Department, will be concerned with sales of perchloroethylene, trichloroethylene, methyl chloride, methylene chloride and chloroform.

He received his degrees of chemical engineer and bachelor of science from the Massachusetts Institute of Technology in 1934 and two months later joined Du Pont. After a year in Philadelphia, he was transferred to the Industrial Engineering Division and stationed at Grasselli, N. J., and later at Niagara Falls.

In 1941, he became a development engineer in the Electrochemicals Department and in 1944, a technical development investigator, from which position he was promoted to his present post.

★ ★ ★

SHILLING NAMED PENN DISTRICT MANAGER

HOWARD C. SHILLING has been appointed district manager of the Goshen, Indiana, territory according to an announcement by R. H. Luscombe, sales manager of Penn Electric Switch Co., manufacturer of automatic controls for heating, refrigeration, pumps and air compressors.

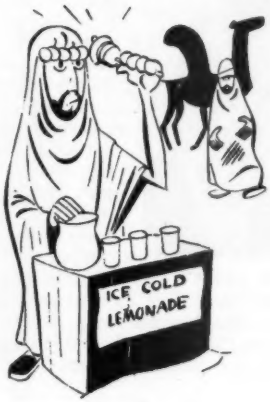
Shilling, an experienced sales engineer in the application of automatic controls, joined the Penn sales organization approximately 7 years ago. He covered the Chicago territory and later was manager of the company's Moline office until his recent appointment.

★ ★ ★

CORRECTION

IN OUR March issue it was stated that the Rochester Sales Branch of Penn Electric Switch Co. is located at 2610 Monroe Avenue. This address should correctly be 2126 Monroe Avenue, Rochester 10, N. Y.

FOR A PROFITABLE INSTALLATION



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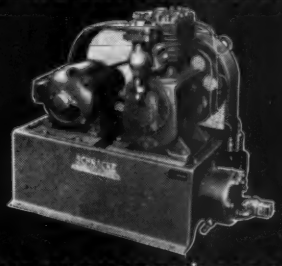
MILLS

a condensing unit for every installation

Mills Industries, Incorporated • 4100 Fullerton Avenue • Chicago 39, Illinois

SCHNACKE
COMPRESSORS and *Complete* CONDENSING UNITS



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100% Sanitary

ACE takes pride in introducing the first completely sanitary fountain . . . passed by the New York City Department of Health.

ACE CABINET CORP.

NEW BEDFORD, MASS.

Manufacturers of: Ice Cream Dispensing Cabinets, Upright Ice Cream Storage Cabinets, Home and Farm Freezers, Frozen Food Display Cabinets, Creamer Soda Fountains, Bobtails and Sandwich Units.

ALCO APPOINTMENT

C. W. ALCOTT, JR.

C. WESLEY ALCOTT, Jr., has been appointed field engineer for the Alco Valve Company, St. Louis manufacturers of refrigerant control valves, in the New York City area, with headquarters at Alco's Chanin Building office.

Mr. Alcott, a graduate of Cornell University in mechanical engineering, has had extensive experience in both the service and manufacturing branches of the refrigeration industry. He was a member of the U. S. Army from 1943 to 1946.

★ ★ ★

KELVINATOR APPOINTMENTS

APPOINTMENT of James A. Warren, Jr., as Kelvinator zone manager at Oakland, Calif., was announced recently by C. T. Lawson, vice-president in charge of Kelvinator sales, Nash-Kelvinator Corporation.

Warren, promoted from the post of assistant zone manager at Chicago, joined Kelvinator in 1945 as field representative at Detroit for the Leonard Division of the company. He became household sales manager of the Chicago zone, under H. A. Dahl, zone manager, in 1946.

Warren replaces F. B. Posthuma, who resigned recently.

C. J. Bachman, Pacific Coast regional manager, said Pacific regional and Oakland zone offices are now located in a new building at 2325 East 12th Street, Oakland.

William C. Mayfield has been appointed assistant Southeastern Zone Manager of the Kelvinator Division, with headquarters at Atlanta.

Mayfield joined Kelvinator in 1937 as sales representative, serving in Detroit and in the Chicago Zone until 1942, when he resigned to enter the U. S. Army. After 36 months in the Pacific theatre of the war, he returned to Kelvinator in 1946.

ANSUL APPOINTS COVERT

ANSUL Chemical Co., Marinette, Wis., recently announced the appointment of Kenneth B. Covert to the position of sales manager of its Fire Extinguisher Division. He took over his new post shortly after the first of the year.

K. B. COVERT

Covert joined the Ansul organization in 1945 and has been in charge of refrigerant sales at the company's Philadelphia office.

Before associating himself with Ansul, he was with Macklanburg Supply Co., Oklahoma City, and prior to that he was with Revere Brass & Copper Co., Chicago.

★ ★ ★

JOHN S. SELTZER JOINS JACK & HEINTZ

JOHN S. SELTZER, Manager of Purchases and Stores during eight of his 24 years with the Westinghouse Electric Corp.'s Lighting Division in Cleveland, has joined Jack & Heintz Precision Industries, Inc., Cleveland, Ohio, as Manager of of Customer Service and Stock Control, Frank R. Kohnstamm, General Sales Manager, announced recently.

J. S. SELTZER

Entering the Purchasing Department at Westinghouse in 1921, Mr. Seltzer was elevated to the position of Assistant Purchasing Agent three years later. He was appointed Purchasing Agent in 1932, and in 1937 became Manager of Purchases and Stores.

Mr. Seltzer left Westinghouse in 1945, to accept the position of General Manager of the Coil Engineering & Manufacturing Co., Roanoke, Ind., supervising the company's entire manufacturing, sales, and engineering activities.

SHANK VALVES

FOR EASY SERVICE MOUNTING

Shank

COPPER DEHYDRATORS

2" O.D.—Copper Tubbing with ¼" and ⅜" Flare Fittings. Ends—Brass Forgings with large hexagon area for Easy Service Mounting. Copper Tube sweat fitted to forging. Brass screens and felt filter.

1" O.D.—Spun End Copper Tube—Brass End Fittings properly proportioned and silver soldered. Brass screens and felt filter.

If Your Jobber Doesn't Stock — Write Us.

CYRUS SHANK COMPANY

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Jarrow...

Refrigerator Door Gaskets Are Again Made From Crude Rubber

Always Demand These Quality Gaskets

JARROW PRODUCTS

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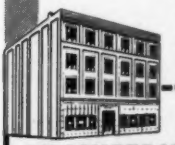
MAKE YOUR FUTURE SECURE...

IN AIR CONDITIONING AND REFRIGERATION!

***The man who knows the groundwork . . . the man who has modern shop practice and servicing methods at his command . . . is the man equipped to get ahead in these progressive fields.**

U.E.I.'s intensive, practical shop training gives you this necessary know-how in day or night classes. Non-residents may obtain fundamentals through home study in spare time followed by a short, intensive shop practice session. Either way . . . the U.E.I. course is *practical* and *complete*.

Civilians and veterans, get the facts before you by clipping the coupon!



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2525 Sheffield Avenue

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Please submit, without obligation, complete information on U.E.I. Air Conditioning and Refrigeration training.

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NEW EXPORT FIRM

HAROLD RACKIN has recently announced the formation of Rackin International at 1025 Broad Street, Newark 2, New Jersey. This firm, of which Mr. Rackin is president, acts as manufacturers' foreign sales representatives, distributing refrigeration and air conditioning equipment throughout the world. Associated with Rackin International, are men with years of engineering experience in these fields.

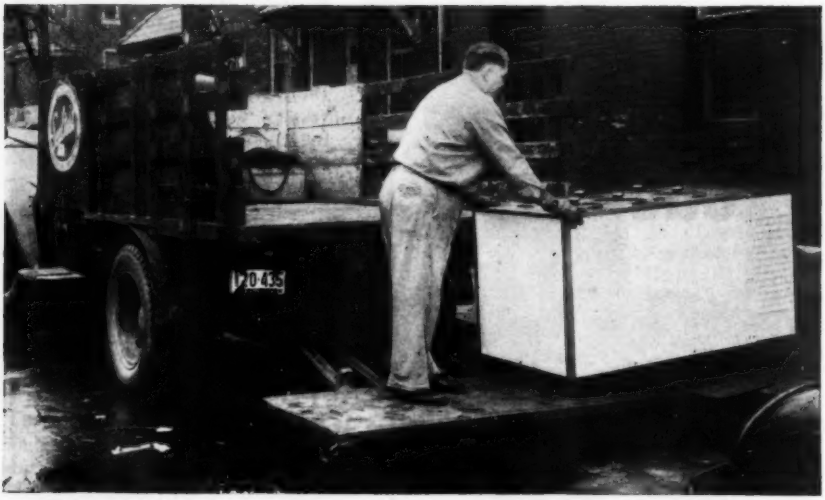
This firm will continue to act as the export department of the American Coils Company of Newark and the other firms for whom Mr. Rackin acted as combination export manager prior to the formation of the new organization.

Mr. Rackin's years of International Trade experience include exporting refrigeration and air conditioning equipment markets all over the world. Prior to the formation of his own firm, he was export manager and an officer of the American Coils Company.

NEW CEMENT FOR GASKETS

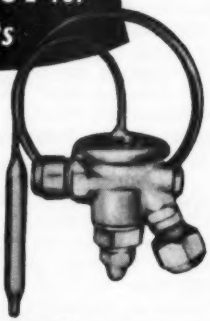
RUBBER gaskets can now be permanently adhered to refrigerator, aircraft and automobile doors by a versatile and powerful cold-setting vinyl base cement which is also extremely effective in bonding plastics to plastics or plastics to non-plastics, according to an announcement by its manufacturer, Schwartz Chemical Company, Inc., 326 West 70 Street, New York 23, N. Y.

Called REZ-N-GLUE, the transparent water-white adhesive is also said to be excellent for bonding rubber, wood, metal, glass, leather and fabrics to themselves or to each other. The fast-drying all-purpose cement has good wet "grab," requires only a one-surface application, is non-staining and remains permanently flexible. It can easily be applied by brush, roller or spray and is resistant to water, oil, gasoline, vermin and mould. REZ-N-GLUE is now available in gallon cans and steel drums.



Pictured here is a new hydraulic lift gate manufactured by the Anthony Company of Streator, Illinois, designed to make loading and unloading of heavy equipment easier. According to the manufacturer it not only cuts loading time but minimizes damage to merchandise. One lever control raises, lowers or stops (holds) load at any elevation. Tailgate stops automatically at floor level and ground. Entire mechanism locks up to body automatically by safety latches when in raised position. Lever manually operated unlocks safety latches for operation. Tailgate may be used conventionally without operating lift.

The UNSURPASSED CONTROL for Refrigerants



V-200 THERMOSTATIC EXPANSION VALVE

Request new Catalog 52C

"6 VALVES IN 1"

GENERAL CONTROLS
801 ALLEN AVENUE GLENDALE 1, CALIF.
BRANCH OFFICES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

1/200,000 of an inch...

—is the degree to which Servel Supermetic parts are polished. That's why Supermetics need no breaking in, give greater satisfaction, last longer. Call your local Servel distributor for full information.

POWERED BY Servel

Electric Refrigeration Division
SERVEL, INC.
EVANSVILLE 20, INDIANA

IT'S THE TRAINING THAT COUNTS!

Practical Shop Training
in
AIR CONDITIONING
DOMESTIC—COMMERCIAL
INDUSTRIAL REFRIGERATION

Service, Maintenance and Installation

COMMERCIAL TRADES INSTITUTE
200 South 20th Street
Department A
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Veterans Inquire About G.I. Training. Train in Birmingham, *"The Magic City."*

NEW! "ALCO-FLAME" LEAK DETECTOR

Here it is . . . the new Justrite Leak Detector, Model 1240 —designed to burn alcohol. Quickly detects leaks in refrigeration systems using halide gases . . . helps on repair work.

This handy tool is also a soldering iron or a blowtorch. Comes complete with soldering tip and flame reducer. Easily convertible.

It's handled the same as the famous Justrite "Gas-Operated" Leak Detector. Built of the finest materials. Simple construction. Proven design.

The Justrite "Alco-Flame" Leak Detector, Model 1240, is ready for delivery. See your jobber today.

JUSTRITE MANUFACTURING CO.
2063 N. Southport Ave., Dept. B-7, Chicago 14, Ill.

CHASE ADDS TO STAFF IN EXPANSION PROGRAM

CHASE Refrigeration Supply Company, Chicago's oldest refrigeration wholesale house, announce the appointment of Carl Picker and C. L. Rogers to their sales staff.

Mr. Picker, formerly Chicago District Sales Manager of Mills Industries, will represent the company in Chicago and northern Illinois. He has many friends among the refrigeration contractors and servicemen in the Chicago area and will spend much of his time working closely with Chase customers on their refrigeration problems.

Mr. Rogers, formerly owned and operated a refrigeration service company in central Illinois, and is especially well qualified, from the standpoint of experience and ability, for his new responsibilities. Mr. Rogers will represent Chase Refrigeration Supply Company in central and southern Illinois.

Other members of the sales staff are Robert B. Mitchell, Chicago representative, and J. P. Glass, Director of Sales. Mr. Mitchell has been a member of Chase Refrigeration Supply Company from the time the business was acquired from Abner Chase. In addition to close personal contacts with the trade through the sales staff Mr. Glass announces that another new catalog will be offered to the trade during the spring.

★ ★ ★

FRIGIDAIRE PERSONNEL

NINE new executive appointments and personnel transfers, together with changes in the organizational structure of Frigidaire's Commercial Refrigeration & Air Conditioning Sales department, were announced recently by W. F. Switzer, Commercial Sales manager.

Switzer said that the changes completes a reorganization program of the Commercial Sales department that has been underway for some time to prepare for a much greater commercial and and conditioning sales volume than ever before. The department will function with five sales sections, namely: Ice Cream Cabinet, Air Conditioning, National Business, Special Applications and a new Commercial Product Sales section. The latter will include General Commercial, Water and Beverage Cooler, Farm, Locker and Case & Fixture sales.

H. A. Beck, formerly Ice Cream Cabinet Sales manager, has been named Assistant to Mr. Switzer. Replacing Beck as Ice Cream Cabinet Sales manager is P. W. Budworth, formerly Director of Government Contracts in Washington, D. C.

Byron C. Wagner, has been appointed Manager of the new Commercial Product Sales section. Appointed Assistant Commercial Product Sales manager is G. H. Ewing, formerly Manager of Case & Fixture sales.

Personnel changes and an expanded operation were also announced by Switzer for the Product Applications section, which is headed by Manager G. A. Hayner. J. A. Smith, formerly Manager of Farm & Locker sales, will serve as Assistant Manager of Product Applications. C. F. Wood, Manager of Air Conditioning Sales, and M. C. Schenk, Manager of National Business sales, will continue to head their respective departments.

★ ★ ★

LINGO COMPANY MOVES

D. C. LINGO CO., wholesalers of refrigeration and air conditioning equipment and supplies in Houston, Texas, announce the opening of their new headquarters at 1109 Chenevert Street.

Mr. Lingo is a pioneer in the wholesaling of refrigerating supplies, having started the business in 1932. Four salesmen now cover the Houston territory selling exclusively to the trade, such items that can be handled profitably by the service companies.

The new location contains 4,000 sq. ft. of floor area, is conveniently located out of the congested area where parking space is available. Twenty-five feet of counter space has been included in the new facilities which will mean quick and efficient service to patrons.

★ ★ ★

CATALOGS AND BULLETINS

THE EMERSON ELECTRIC MFG. CO., St. Louis, Mo., is offering a new master fan catalog, illustrating in color and describing in detail their complete line of 1948 fans.

This 32-page colorful catalog gives design and construction specifications with complete performance data on the

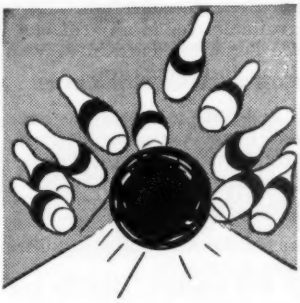
RECORDING INSTRUMENTS
of Air Temperature and Motor Operation

These instruments take the guesswork out of trouble-shooting on any type of refrigeration equipment. With them you can automatically chart a written record of the true performance of the equipment you are servicing in the home, store, or cold storage plant. Such charts, taken before and after the job, are good proof of work well done.

Tempscribe styles for refrigeration service:

Temperature Ranges: — 20° to + 40° F., or — 10° to + 50° F.
Operation Recorder: either Type D for series connection up to 250 volts, or Type C for parallel connection up to 250 volts.

BACHARACH INDUSTRIAL INSTRUMENT CO., 7000 BENNETT ST. • PITTSBURGH 8, PA.



Making The Tough Ones Look Easy

C.T.I. training is for the man who wants to make every minute on the job count. Learn the short cuts from experts in the field of Domestic and Commercial Refrigeration and Air Conditioning Maintenance and Service.

Full or part time Residence course or Combination Home Study & Shop Training.

VETERANS—C.T.I. courses approved under the G.I. Bill.

NON-VETERANS—Do not let lack of ready cash delay your start. Investigate our Pay After Graduation Plan and our Low Easy Payment Plan.

FREE—Write for our Booklet and our interesting publication SKILLED TRADESMAN. No obligation.

COMMERCIAL TRADES INSTITUTE

1400 Greenleaf Avenue **Chicago 26, Ill.**

IT'S EASY TO SPOT WHAT'S WRONG

With this vestpocket Calculator you can quickly determine the correct head pressure when the suction pressure and refrigerant are known.

POSTPAID $1.00

NICKERSON & COLLINS CO.
435 N. WALLER, CHICAGO 44, ILL.

$5.00 FOR YOUR— SERVICE POINTERS

Have you read this issue's "down-to-earth" useful kind of information from practical men who have tried it? If you have not, you're overlooking some valuable ideas.

EVERYONE HAS AN IDEA TO OFFER—

Here is your opportunity to exchange yours with the other fellow. . . . Five dollars or two year's subscription to R.S.E. will be paid for each pointer published.

Send yours to—Service Pointer Editor.

The REFRIGERATION SERVICE ENGINEER
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. . . THE ONLY FLUX THAT YOU CAN ACTUALLY SEE

You can SEE the solder flow—know that the metal is fluxed when it's covered with TINIT. Cleans, tins and fluxes stainless steel, black iron, hard-drawn copper and all metals in one quick operation. Sold by refrigeration service, tinning supply, automotive and other jobbers for 19 years.

BUY FROM YOUR JOBBER

TINIT MFG. CO., INC.
P. O. Box 794, Denver, Colo.

various types of desk and stand fans, air circulators, ceiling fans, kitchen ventilators, exhaust and cooler fans. Included is detailed dimensional information for Emerson-Electric exhaust and ventilating fans and accessories. A copy of this catalog (Unit X6049) will be mailed to those requesting it on their company stationery.

EBCO MANUFACTURING COMPANY is offering a comprehensive and carefully prepared guide for electric water cooler servicemen. The publication is entitled "Service Manual and Parts List—Electric Water Coolers." It was compiled under the close general supervision of Louis P. Benua, Ebco general works manager, assisted by C. D. Hammond, service manager; W. L. Winchester, advertising manager, and R. H. Orthoefer, chief engineer.

A. R. Benua, president of the Ebco Manufacturing Co., said that the manual was compiled particularly for the benefit of those servicing Kelvinator refrigerated coolers, but that it will prove to be of inestimable value to all water cooler servicemen. "So far as we can determine," he said, "this is the most complete manual of its kind ever compiled and published for the electric drinking water cooler serviceman."

The manual is written in simple language and tells, step by step, how to properly service coolers. Bona-fide electric water cooler servicemen may procure copies of the "Service Manual and Parts List—Electric Water Coolers" by writing to the Ebco Manufacturing Co., 401 W. Town St., Columbus 8, Ohio.

AUTOMATIC PRODUCTS CO. — A new 20-page condensed catalog, describing the entire line of AP refrigeration valves, has just been published by Automatic Products Co., Milwaukee.

Thirty-five photos and drawings are used to illustrate features of AP expansion valves, including the new 304 automatic expansion valve recently announced to the industry, AP water and pressure regulating valves, including the new model 65 water regulating valve and the new model 234 refrigerant check valve, AP solenoids, AP Trapdri's and Trapit's. Engineering specifications for each valve are included. Copies of the new AP condensed catalog may be secured by writing to Automatic Products Company, Milwaukee 10, Wis.

AIRO SUPPLY COMPANY, INC. of 2732 North Ashland Ave., Chicago, Ill., issued their 48-A catalog recently, packed with the merchandise that drew the crowds at the Cleveland show. By delaying their catalog they were able to bring to the service engineers the most complete and up-to-date catalog available. Many new lines have been added, and the popular lines have been greatly expanded. The easy-to-read index makes it easy to find the wanted merchandise either by brand name or by merchandise classification. This catalog is available free to any refrigeration service engineers or dealers who write for it on their letterhead.

KINETIC CHEMICALS, INC., have available new charts covering the pressure temperature relationships of twenty-four different refrigerants through a wide temperature pressure range. They have been made up in 8½"x11" size and are punched for easy filing in three-ring reference notebooks.

There are two charts to each set and Chart I covers temperature ranges from minus 40F. to plus 250F., while Chart II covers a temperature range from minus 180F. to plus 60F. They are available free of charge to those who are in need of such information and can use them, upon request to Kinetic Chemicals, Inc., Wilmington 98, Del.

KRAMER TRENTON CO., Trenton, N. J., have issued a new 32-page catalog and specification book on refrigeration products. It is thoroughly illustrated and contains much information of value to the application and service engineer.

Products covered in the book include bare tube, special size and walk-in cooler coils, baffles, condensers, heat interchangers, ice makers, unit coolers, panel units, water coolers and thermobanks.

Complete descriptions and specifications on each item enable the application engineer to select the exact piece of equipment to meet his needs.

SERVICE PARTS CO., 2511 Lake St., Melrose Park, Ill., have issued a new catalog supplement of refrigeration parts and supplies. Included are two pages of hermetic unit repair parts.

REFRIGERATION
AIR CONDITIONING
HEATING

WHOLESALERS

Free Delivery by Our Own Fleet of Trucks in Chicago Metropolitan Area.
The Best Brands Obtainable—at Right Prices. — Competent Help to Serve You.
MARCH 1, 1948 DISCOUNT SHEET & SUPPLEMENT MAILED ON REQUEST

Distributor for
PAR CONDENSING UNITS
NOW IN STOCK

BRANCH 809 WEST 74th ST.

Automatic
HEATING & COOLING SUPPLY

647 W. LAKE ST., CHICAGO 6, ILL.

IN REFRIGERATION EXPERIENCED MEN CAN SERVE YOU BEST

Here's Jan Van Ginhoven our repair shop foreman. He's had 11 years refrigeration experience.

WEST COAST SUPPLY JOBBERS SINCE 1928

REFRIGERATION SERVICE INC.
3109 BEVERLY BLVD.
LOS ANGELES 4 CALIF.

LET'S TRY SELLING

EFFORT will maintain sales volume in '48. You get the sales. We'll give you prompt, efficient delivery service on refrigeration equipment, accessories and supplies.

Beverage Coolers
Farm-Home Freezers and Milk Coolers
Krack Coils
Packaged Air Conditioning Units
Remote Air Conditioning Systems
Window Air Conditioners
Walk-In Coolers
¼ H.P. to 30 H.P. Condensing Units

WRITE FOR DATA AND PRICES. PROMPT DELIVERY ON ALL ITEMS.

THERMAL COMPANY, INC.

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READY NOW

Write for our new 1948 Refrigeration and Electrical Parts Catalog.

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G. & E. EQUIPMENT SUPPLY CO.
Ogden Ave. at Fulton
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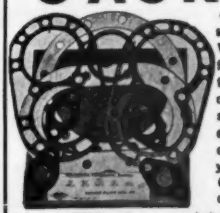
GASKETS — GASKETS



• Play safe and specify CHICAGO-WILCOX gaskets for every refrigeration need. Our complete gasket service provides a dependable source of supply to meet your requirements. Get full details today.

Write for complete catalog
CHICAGO-WILCOX MFG. CO.
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FAST MAIL ORDER SERVICE

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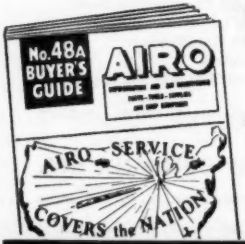

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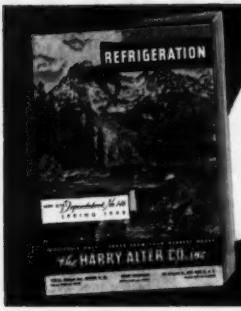

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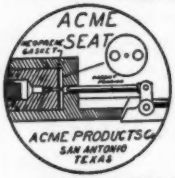

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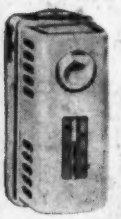

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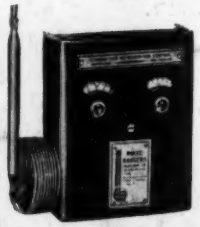

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